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HOST AND PATHOGEN INDICES TO THE DISEASES OBSERVED ON GRASSES IN CERTAIN WESTERN STATES DURING 1941

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

HOST AND PATHOGEN INDICES TO THE DISEASES OBSERVED ON GRASSES IN CERTAIN WESTERN STATES DURING 1941[1]

By George W. Fischer, Roderick Sprague,
Howard W. Johnson, and John R. Hardison[2]

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The host and pathogen indices which follow summarize the data resulting from collections and observations of grass diseases in the States of Arizona, California, Idaho, Minnesota, Nebraska, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming in 1941.

Most of the records are from the extensive observational row nurseries of the Soil Conservation Service and the Bureau of Plant Industry, United States Department of Agriculture, at Mandan, North Dakota; Pullman, Washington; Corvallis, Oregon; Tucson, Arizona and Pleasanton, California. State observational grass nurseries at Berkeley and Davis, California were surveyed intensively also. However, these records are well supplemented and substantiated by extensive collecting and survey trips in most of the States mentioned above.

In general the 1941 growing season was one of almost unprecedented rainfall, in most of the area covered. As a result, the development of foliage diseases was considerably favored as evidenced by the unusual number and extent of development of leaf spots, rusts, and bacterial diseases.

This report includes 259 species and varieties of native and introduced grasses, on which a total of 161 diseases are recorded; 62 leaf spots, streaks, etc., 30 rusts, 28 rootrots and secondary rootrots, and 25 smuts. Some of these diseases were found on a large number of grasses, as outlined in Table 1.

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[1] Grass disease investigations of the Divisions of Forage Crops and Diseases, Cereal Crops and Diseases, and Dry Land Agriculture, Bureau of Plant Industry in cooperation with the Nursery Division, Soil Conservation Service, United States Department of Agriculture, and the North Dakota and Washington Agricultural Experiment Stations. Published as Scientific Paper No. 517, College of Agriculture and Agricultural Experiment Station, State College of Washington, Pullman.

[2] Associate pathologist, pathologist, pathologist in charge of investigations of forage crop diseases, and agent, respectively, Bureau of Plant Industry, United States Department of Agriculture, Pullman, Washington; Mandan, North Dakota; and Washington, D. C.

Table 1. Number of host species and varieties recorded for the more prevalent grass diseases in the western states in 1941.

DISEASE	CAUSAL ORGANISM	NUMBER OF HOSTS
Stem rust	Puccinia graminis	81
Rootrot	Fusarium scirpi acuminatum	63
Leaf rust	Puccinia rubigo-vera	54
Stripe rust	Puccinia glumarum	53
Leaf spot	Scolecotrichum graminis	53
Rootrot	Helminthosporium sativum	53
Ergot	Claviceps purpurea	50
Selenophoma stem speckle and leaf spot	Selenophoma donacis and varieties	43
Root browning	Pythium arrhenomanes	42
Root necrosis and Damping-off	Pythium debaryanum	39
Rootrot	Rhizoctonia solani	36
Bends	Cause unknown	33
Powdery mildew	Erysiphe graminis	31
Stem smut	Ustilago hypodytes	26
Head smut	Ustilago bullata	26
Chocolate spot	Bacterium coronafaciens atropurpureum	24
Brown stripe rust	Puccinia montanensis	22
Crown rust	Puccinia coronata	16
Stripe smut	Ustilago striaeformis	13

It has seemed desirable to give the authorities for grass names in the host index and for the pathogens in the pathogen index.

The task of identifying the thousands of collections forming the basis for this report was in general divided as follows: Smuts and rusts were identified at Pullman, Washington, leaf spots and root rots at Mandan, North Dakota, and other diseases at both places. Many of the pathogens are named to genus only, because they are being studied further or are in the process of publication elsewhere. This is particularly true for species of Ascochyta, Selenophoma, Septoria, Tilletia and Ustilago. The collecting was performed by the authors as follows: Fischer and Hardison covered Washington (east of Cascades), Idaho, Montana, western Wyoming, northern Utah, and northeastern Oregon. Sprague collected in Montana, North and South Dakota and adjacent Minnesota, briefly in Nebraska and, on personal travel, in southern Montana, northwestern Wyoming, northern Idaho, and central Washington; Johnson collected in Arizona, California, and western Oregon.

The authors are grateful to the many persons who have aided in this survey by collecting and submitting grass disease specimens from practically all parts of the area represented.

HOST INDEX

AEGILOPS CYLINDRICA Host.
Stripe rust, Puccinia glumarum -- Pullman, Wash.3/

AEGILOPS TRIUNCIALIS L. (P.I. 134607)
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.

AGROPYRON ALBICANS Scribn. & Smith
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON AMURENSE Drobov (P.I. 131532)
Bends, cause undet.4/ -- Pullman, Wash.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

AGROPYRON CANINUM(L.) Beauv. (F.P.I. 90124)
Damping-off, Pythium ultimum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Leaf spot, Ascochyta agropyrina -- Mandan, N. Dak.
Septoria sp. -- Pullman, Wash.
Leaf streak, Scolecotrichum graminis -- Mandan, N. Dak.
Root necrosis, Pythium deharyanum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON CILIARE (Trin.) Franch. (P.I. 109805)
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium deharyanum -- Mandan, N. Dak.
Rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON CRISTATUM (L.) Gaertn.
Bacterial slime spot, Aplanobacter agropyri -- Mandan, N. Dak.
Bends, cause undet. -- Pullman, Wash.; western Mont.
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.

3/ Most of the records from Pullman, Wash. and Mandan, N. Dak. are the result of intensive row-by-row notes and collections from the very extensive Soil Conservation Service and Bureau of Plant Industry nurseries at both places.

4/ See Phytopath. 31: 674-676. 1941

AGROPYRON CRISTATUM cont.

Damping-off, Pythium irregulare -- Mandan, N. Dak.
Pythium ultimum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.; eastern, central, and southern Mont.; N. and S. Dak. Common at Mandan, N. Dak.
Leaf rot, Ascochyta agropyrina -- Forsythe, Mont.
Leaf rust, Puccinia rubigo-vera -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- General in N. and S. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Rootrot, Fusarium graminearum -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- N. and S. Dak. (Secondary)
Helminthosporium sativum -- Nebr., N. and S. Dak.
Rhizoctonia solani -- Dickinson, Mandan, N. Dak.; Hecla, S. Dak.
Seedling blight 5/, cause undet. -- eastern Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.; Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum, with parasite, Darluca filum -- Pullman, Wash.

AGROPYRON DASYSTACHYUM (Hook.) Scribn.

Bends, cause undet. -- Pullman, Wash.
Brown stripe rust, Puccinia montanensis -- Pullman, Wash.; central Mont.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.; central Mont.; Mandan, N. Dak.
Head smut, Ustilago bullata -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.; central and southern Wash.; Mandan, N. Dak.
Leaf streak, Scolecotrichum graminis -- western Wyo.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Sclerotium sp. -- Mandan, N. Dak. (Pathogenicity doubtful)
Seedling blight, cause undet. 5/ -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman (with Darluca filum), southern Wash.; central Calif.; Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON DESERTORUM (Fisch.) Schult. (P.I. 110302; 113013)

Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Pythium ultimum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

5/ Probably Pythium spp.

AGROPYRON DIVARICATUM Boiss. & Bal.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON ELMERI Scribn.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.

AGROPYRON ELONGATUM (Host) Beauv.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak. (weak parasite).
Fusarium scirpi var. compactum -- Mandan, N. Dak. (weak parasite).
Helminthosporium sativum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.

AGROPYRON FERGANENSE Drobov (P.I. 116254)
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.

AGROPYRON GRIFFITHSII Scribn. & Smith
Leaf streak, Scolecotrichum graminis -- Harney Nat'l For., S. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON HIRSUTUM (Bartol)
Leaf rust, Puccinia rubigo-vera (DC.) Wint. -- Mandan, N. Dak.

AGROPYRON INERME (Scribn. & Smith) Rydb.
Bends, cause undet. -- Pullman, Wash.
Brown stripe rust, Puccinia montanensis -- Pullman, Wash., and central Mont.
Ergot, Claviceps purpurea -- central Mont., Roundup, Mont., Pullman, Wash., northern Ore.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., central and southern Mont.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Rust, Puccinia pattersoniana -- Oregon, eastern and central Wash.
Seedling blight, cause undet. -- eastern Wash.
Selenophoma sheath speckle, Selenophoma donacis var.6/ -- eastern Wash.
Stem rust, Puccinia graminis -- Pullman, Wash., Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash., eastern and central Wash., central Mont., northern Ore.
Stripe smut, Ustilago striaeformis -- Pullman, Wash.

6/ Several varieties of Selenophoma donacis or possibly distinct species have been recognized in this work and are under investigation at Mandan, N. Dak.

AGROPYRON INTERMEDIUM (Host) Beauv. (U.S.S.R. W. 2327)
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.

AGROPYRON PANORMITAMUM Parl.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON REPENS (L.) Beauv.
Brown stripe rust, Puccinia montanensis -- Quad Creek in southern Mont.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- General in Minn., N. Dak., and S. Dak.
Ergot, Claviceps purpurea -- N. Dak., S. Dak.
Leaf blotch, Septoria elymi -- Wild Rice, Buxton, N. Dak.; Laurel, Mont.
Leaf rot, Wojnowicia graminis -- Jamestown, N. Dak.
Leaf streak, Scolecotrichum graminis -- Buxton, N. Dak.
Root browning, Pythium arrhenomanes -- Brocket, Mountain, Park River, N. Dak.; Fosston, Minn.
Root necrosis, Pythium debaryanum -- Fosston, Minn.
Pythium ultimum -- near Bemidji, Minn.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Pythium periilum -- near Bemidji, Minn.
Rhizoctonia solani -- Sykeston, N. Dak.
Scald, Rhynchosporium secalis -- Fosston, Minn.
Secondary rootrot, Fusarium scirpi var. acuminatum -- N. Dak., S. Dak., Minn.
Helminthosporium halodes -- Fosston, Minn.
Wojnowicia graminis -- Gardner, N. Dak.
Stripe rust, Puccinia glumarum -- central Mont.
Stem smut, Ustilago hypodytes -- eastern and central Wash., western Idaho, northeast Ore.

AGROPYRON RIPARIUM Scribn. & Smith (P.E.I. 127957)
Brown stripe rust, Puccinia montanensis -- southern Idaho; Mandan, N. Dak. (with parasite Darluca filum).
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.; Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. accuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON SIBIRICUM (Willd.) Beauv. (F.P.I. 113047)
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Mandan, N. Dak.
Leaf rot, Phytophthora sp. -- Mandan, N. Dak.

AGROPYRON SIBIRICUM Cont.

Leaf rust, Puccinia rubigo-vera -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.

AGROPYRON SMITHII Rydb.

Brown stripe rust, Puccinia montanensis -- Pullman, Wash. (with Darluca filum); central Mont.; Mandan, Langdon, N. Dak.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- general in N. Dak.
Ergot, Claviceps purpurea -- Forsythe, central and southern Mont.; Jackson, Wyo.
Leaf blotch, Septoria elymi -- Mandan, N. Dak.
Leaf rot, Wojnowicia graminis -- Lakota, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.; central Mont. (with Darluca filum); Mandan, Langdon, N. Dak.
Leaf speckle, Cladosporium herbarum -- central N. Dak. (common in very early spring on new growth).
Leaf spot, Septoria sp.7/ (not elymi) -- Forsythe, Mont.; western N. Dak.
Leaf streak, Scolecotrichum graminis -- N. Dak.
Mold, Wojnowicia graminis -- Forsythe, Mont.
Powdery mildew, Erysiphe graminis -- central Mont.; central N. Dak.
Root necrosis, Pythium debaryanum -- Dwight, N. Dak.
Rootrot, Helminthosporium sativum -- general east of Rocky Mts.
Secondary rootrot, Fusarium scirpi var. acuminatum -- general east of Rockies.
Phoma (terrestris) -- central N. Dak.
Rhizoctonia solani -- scattered in N. Dak., S. Dak.
Selenophoma stem speckle, Selenophoma donacis var. -- general in N. Dak., S. Dak., Mont. and Wyo.
Stem rust, Puccinia graminis -- Pullman, Wash.; central Mont.; central N. Dak.; Huron, S. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.; central Mont.

AGROPYRON SPICATUM (Pursh) Scribn. & Smith

Bends, cause undet. -- Pullman, Wash.
Brown stripe rust, Puccinia montanensis -- Pullman, Wash.; central Mont.

7/ A complex of forms on Agropyron and Elymus which includes S. infuscans (Ell. and Ev.) Sprague, S. elymi-europaei Jaap and material near S. nodorum Berk. is under study at Mandan, N. D.

AGROPYRON SPICATUM Cont.

Ergot, Claviceps purpurea -- Pullman, Wash.; Roundup, central and southern Mont.

Leaf rust, Puccinia rubigo-vera -- Pullman, Wash. (with Darluca filum) central Wash.; central Mont; Yellowstone Park, Wyo.

Leaf streak, Scolecotrichum graminis -- Pullman, Wash; central Mont.

Powdery mildew, Erysiphe graminis -- Pullman, Wash.; northeast Ore.

Root browning, Pythium arrhenomanes -- Mandan, N. Dak.

Rust, Puccinia pattersoniana -- southern Wash.; northern Ore.; western Idaho.

Seedling blight, cause undet. -- eastern Wash.

Selenophoma stem speckle, Selenophoma donacis var. -- Sentinel Butte, N. Dak.

Stem rust, Puccinia graminis -- Pullman, Wash.; Mandan, N. Dak.

Stem smut, Ustilago hypodytes -- Pullman, Wash.

Stripe rust, Puccinia glumarum -- Pullman, east and central Wash.; west Ore.; central Mont.

AGROPYRON SUBSECUNDUM (Link) Hitchc.

Brown stripe rust, Puccinia montanensis -- Pullman, Wash.; central Mont.

Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.

Ergot, Claviceps purpurea -- Pullman, Wash.

Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.; north Wyo.

Leaf spot, Scolecotrichum graminis -- Pullman, Wash.; north Wyo.

Leaf tip spot, Ascochyta agropyrina -- Mandan, N. Dak.

Powdery mildew, Erysiphe graminis -- North Wyo.

Rootrot, Helminthosporium sativum -- central N. Dak.

Secondary rootrot, Fusarium scirpi var. acuminatum -- central N. Dak.

Stem rust, Puccinia graminis -- Pullman, Wash.

Stripe rust, Puccinia glumarum -- Pullman, Wash., central Mont., northern Wyo.

Stripe smut, Ustilago striaeformis -- Pullman, Wash.

AGROPYRON TRACHYCAULUM[8] (Link) Malte

Anthracnose, Colletotrichum graminicolum -- Lawton, N. Dak.

Bends, cause undet. -- Pullman, Wash.; central Mont.

Brown stripe rust, Puccinia montanensis -- Pullman, Wash.; central Mont.; Mandan, Langdon, N. Dak.

Cat-tail disease, Epichloë typhina -- Pullman, Wash.; central Mont.; western N. Dak.

Char spot, Septogloeum oxysporum -- Lawton, Tagus, N. Dak.

Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Lawton, S. Dak.

8/ A. pauciflorum (slender wheatgrass); see Rhodora 36:417. 1934.

AGROPYRON TRACHYCAULUM Cont.

Ergot, Claviceps purpurea -- Pullman, Wash., northern Oreg.; general in Mont. and N. Dak.
Flag smut, Urocystis agropyri -- northwest Wyo.
Head smut, Ustilago bullata -- Pullman, Wash., northeast Oreg., southern Idaho, central Mont.
Leaf rust, Puccinia rubigo-vera (with Darluca filum) -- Pullman, Wash.; Jackson, Wyo.; Tappen, N. Dak.
Leaf spot, Ascochyta agropyrina -- Lawton, N. Dak.
Selenophoma donacis var. -- Drummond, Mont.
Septoria sp. -- southern Mont., western N. Dak.
Septoria elymi -- Langdon, N. Dak.
Leaf spot and blotch, near Septoria nodorum -- Ward Co., and Lawton, S. Dak.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.; eastern and central Mont.; Yellowstone Park, Jackson, Wyo.; Crookston, Minn.; N. Dak.
Powdery mildew, Erysiphe graminis -- central Mont., northeast Oreg., eastern Wash., central N. Dak.
Purple leaf spot, Stagonospora arenaria -- Mandan, N. Dak.
Root browning, Pythium aristosporum -- Mandan, N. Dak.
Pythium arrhenomanes -- Mandan, N. Dak.
Roctrot, Helminthosporium sativum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Scald, Rhynchosporium secalis -- Pullman, Wash.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash., western N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash., central Mont., northern Wyo.
Stripe smut, Ustilago striaeformis -- Pullman, Wash., central Mont.
Twist disease, Dilophospora alopecuri -- northwest Wyo., South Roosevelt Park, N. Dak.

AGROPYRON TRICHOPHORUM (Link) Richt. (P.I.106,831)(F.P.I.107,327-29)

Bacterial slime spot, Aplanobacter agropyri -- Mandan, N. Dak.
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.; Mandan, N. Dak.
Leaf spot, Ascochyta agropyrina -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Rootrot, Rhizoctonia solani -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROPYRON UGAMICUM Drobov (F.P.I.110,065).

Stripe rust, Puccinia glumarum -- Pullman, Wash.

AGROSTIS ALBA L.
Char spot, Septogloeum oxysporum -- northwest Wyo.
Leaf blight, Sclerotium rhizodes -- northwest Wyo.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash., northern Idaho, southern Mont., northeast Oreg., northwest Wyo., Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Pythium ultimum -- Mandan, N. Dak.
Stripe smut, Ustilago striaeformis -- Pullman, and general in eastern Wash.; western Oreg.; western Idaho; northwest Wyo.

AGROSTIS CASTELLANA Boiss. & Reut.
Crown rust, Puccinia coronata -- northern Calif., western Oreg.
Leaf blotch, Septoria triseti -- western Oreg.
Stripe smut, Ustilago striaeformis -- Pullman, Wash.

AGROSTIS EXARATA Trin.
Leaf streak, Scolecotrichum graminis -- western Idaho.
Powdery mildew, Erysiphe graminis -- western Idaho, northeast Oreg., eastern Wash.
Stem rust, Puccinia graminis -- western Idaho.

AGROSTIS HALLII Vasey
Stem rust, Puccinia graminis -- northwest Calif.

AGROSTIS PALUSTRIS Huds.
Stripe smut, Ustilago striaeformis -- western Oreg.

AGROSTIS SCABRA Willd.
Char spot, Septogloeum oxysporum -- Cornucopia, Oreg.
Leaf spot, Septoria secalis var. stipae -- Ft. Totten, N. Dak.
Selenophoma speckle, Selenophoma donacis var. -- Ft. Totten, N. Dak.

AGROSTIS STOLONIFERA L.
Stripe smut, Ustilago striaeformis -- Pullman, Wash.

AGROSTIS TENUIS Sibth.
Crown rust, Puccinia coronata -- western Oreg.
Leaf blotch, Septoria triseti -- western Oreg.
Stem rust, Puccinia graminis -- western Oreg.

ALOPECURUS AEQUALIS Sobol.
Leaf streak, Scolecotrichum graminis -- northeast Oreg.

ALOPECURUS ARUNDINACEUS Poir.
Stem rust, Puccinia graminis -- Tucson, Ariz.

ALOPECURUS PRATENSIS L.
Ergot, Claviceps purpurea -- central Mont. and Corvallis, Oreg.
Leaf streak, Scolecotrichum graminis -- Mandan, N. Dak.
Scald, Rhynchosporium orthosporum -- Corvallis, Granger, Oreg.

AMMOPHILA ARENARIA (L.) Link.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.

ANDROPOGON FURCATUS Muhl.
Leaf spot, Ascochyta sp. -- Mandan, N. Dak.
Phyllosticta sp. -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- McCanna, Mandan, N. Dak.
Root necrosis and Damping-off, Pythium debaryanum -- Albion, Nebr.; Mandan, N. Dak.
Pythium ultimum -- Albion, Nebr.
Rootrot, Fusarium scirpi var. acuminatum -- Albion, Nebr.
Stomatal drowning, cause, excess rain plus Bacterium sp. -- Mandan, N. Dak.

ANDROPOGON HALLII Hack.
Damping-off, Pythium debaryanum -- Mandan, McCanna, N. Dak.
Rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Helminthosporium sativum -- Mandan, N. Dak.
Stomatal drowning, cause, excess rain plus Bacterium sp. -- Mandan, N. Dak.

ANDROPOGON SCOPARIUS Michx.
Root necrosis and Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Rust, Puccinia ellisiana -- Mandan, N. Dak.
Stomatal drowning, cause, excess rain plus Bacterium sp. -- Mandan, N. Dak.

ARISTIDA LONGISETA Steud.
Kernel smut, Sorosporium consanguineum -- western Idaho.
Rust, Puccinia aristidae -- western Idaho.
Selenophoma stem speckle, Selenophoma donacis var. -- extreme western N. Dak.

ARRHENATHERUM ELATIUS (L.) Mert. & Koch.
Ergot, Claviceps purpurea -- central Mont. and Corvallis, Oreg.
Leaf spot and stem speckle, Selenophoma donacis var. -- Bozeman, Mont.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.; central Mont.; western Oreg.
Loose smut, Ustilago avenae -- Pullman, Wash.; south Idaho.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Rootrot (charcoal rot) Macrophomina phaseoli -- Mandan, N. Dak.

AVENA FATUA L.
Anthracnose, Colletotrichum graminicolum -- Grand Forks, N. Dak.
Crown rust, Puccinia coronata -- southern, central and northwest Calif.; east Wash.
Leaf spot, Ascochyta avenae & associated ascomycete --Pullman, Wash.

AVENA FATUA L. Cont.
Root browning, Pythium arrhenomanes -- Mandan, McCanna, Taft, N. Dak.
Rootrot, Helminthosporium sativum -- McCanna, N. Dak.
Stem rust, Puccinia graminis avenae -- south, central and northeast Calif.; eastern Wash.; eastern and northeast N. Dak. (Darluca filum near Taft, N. Dak.)

AVENA HOOKERI Scribn.
Anthracnose, Colletotrichum graminicolum -- McHenry Co., N. Dak.
Crown rust, Puccinia coronata -- Quad Creek in southern Mont.

BECKMANNIA SYZIGACHNE (Steud.) Fernald
Crown rust, Puccinia coronata -- central Calif.
Leaf streak, Scolecotrichum graminis -- Ward Co., N. Dak.

BOUTELOUA CURTIPENDULA (Michx.) Torr.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Helminthosporium sativum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Rust, Puccinia vexans (with Darluca filum) -- Dickinson, Mandan, N. Dak.
Selenophoma stem speckle and leaf spot; Selenophoma donacis var. -- near Beach, N. Dak.

BOUTELOUA GRACILIS (H. B. K.) Lag.
Damping-off, Pythium debaryanum -- Mandan, N. Dak., Grassy Butte, McCanna, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, McCanna, N. Dak.
Rootrot, Curvularia geniculata -- Yates, Mont.; western N. Dak.
Fusarium poae -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Fusarium sporotrichoides -- Albion, Nebr.
Helminthosporium sativum -- Coburn, Mandan, N. Dak.
Rhizoctonia solani -- McCanna, Mandan, N. Dak.
Rust, Puccinia bartholomaei -- Coburn, N. Dak.

BRACHYPODIUM SYLVATICUM (Huds.) Beauv. (P.I.113,027).
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Secondary rootrot, Curvularia geniculata -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Macrophomina phaseoli -- Mandan, N. Dak.

BROMUS ANOMALUS Rupr.
Head smut, Ustilago bullata -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

BROMUS ARVENSIS L. (Denmark F.C.13,674).
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.

BROMUS CARINATUS Hook. & Arn.
Ergot, Claviceps purpurea -- western Idaho, central Mont.
Head smut, Ustilago bullata -- eastern Wash., Pullman, Wash.; western and southern Idaho; central Mont.; northern Wyo.; northern Utah.
Leaf rust, Puccinia rubigo-vera -- general from Idaho westward; and Calif.
Leaf streak, Scolecotrichum graminis -- western Idaho, central Mont., Jackson, Wyo.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.; west Idaho; Cooke City, Mont.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Scald, Rhynchosporium secalis -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.; central Mont.; northeast Oreg.; eastern Wash.; northern Wyo.

BROMUS CATHARTICUS Vahl.
Head smut, Ustilago bullata -- western Oreg.
Leaf streak, Scolecotrichum graminis -- eastern Wash.

BROMUS CILIATUS L.
Ergot, Claviceps purpurea -- central Mont.
Head smut, Ustilago bullata -- central Mont.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash. and northeast Oreg.
Stem rust, Puccinia graminis -- central Calif.
Stripe rust, Puccinia glumarum -- central Mont.

BROMUS ERECTUS Huds.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- eastern Wash.; central Mont.
Ergot, Claviceps purpurea -- central Mont.
Head smut, Ustilago bullata -- central and eastern Wash.; south Idaho.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

BROMUS INERMIS Leyss.
Bends, cause undet. -- Pullman, Wash.; central Mont.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Pullman, Wash.; general in N. Dak., S. Dak., Minn., Nebr.
Ergot, Claviceps purpurea -- N. Dak., and S. Dak.
Leaf spot, Ascochyta graminicola var. diedickeana -- McCanna, N. Dak.; Laporte, Minn.
Selenophoma bromigena -- Pullman, Wash. and almost universal east of the Rockies except in the drier areas.

BROMUS INERMIS Cont.
Root browning, Pythium arrhenomanes --common and destructive from Minn. to the Rockies.
Root necrosis, Pythium debaryanum -- scattered in N. Dak., S. Dak., Minn. and Nebr.
Pythium irregulare -- Mandan, N. Dak.
Pythium (?) proliferum (irregulare)-- Lincoln, Nebr.
Pythium ultimum -- Lincoln, Nebr.
Rootrot, Helminthosporium sativum -- common in N. Dak., S. Dak., Mont. and in Nebr.
Secondary rootrot, Fusarium scirpi var. acuminatum -- N. Dak., S. Dak., Mont.
Helminthosporium sp. -- rarely isolated in N. Dak.
Sclerotium sp. -- central N. Dak.
Rhizoctonia solani -- N. Dak.; S. Dak.
Scald, Rhynchosporium secalis -- Pullman, Wash.

BROMUS JAPONICUS Thurb.
Head smut, Ustilago bullata -- eastern Wash.
Leaf spot, Septoria bromi -- eastern Wash.
Secondary rootrot, Fusarium scirpi acuminatum -- Highmore, S. Dak.

BROMUS LAEVIPES Shear
Leaf rust, Puccinia rubigo-vera -- central and north Calif.

BROMUS LANUGINOSUS Poir.
Leaf rust, Puccinia rubigo-vera -- central Calif.

BROMUS MARGINATUS Nees
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Pullman, Wash.
Ergot, Claviceps purpurea -- Pullman, Wash., northern Idaho.
Head smut, Ustilago bullata -- Pullman, Wash.; southern Idaho; western Oreg.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash. (with parasite Darluca filum); central Calif.
Leaf streak, Scolecotrichum graminis -- eastern Wash.
Powdery mildew, Erysiphe graminis -- Pullman, Wash., western Mont.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Scald, Rhynchosporium secalis -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- central Calif., central Oreg.

BROMUS MADRITENSIS L.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.

BROMUS MOLLIS L.
Bunt, Tilletia guyotiana -- northern Idaho, eastern Wash.
Head smut, Ustilago bullata -- central and northern Calif., northern Utah, southern Wash.
Leaf rust, Puccinia rubigo-vera -- central Calif.

BROMUS POLYANTHUS Scribn.
Head smut, Ustilago bullata -- southern Idaho.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., central Calif.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

BROMUS PURGANS L.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

BROMUS RACEMOSUS L.
Bunt, Tilletia guyotiana -- southern Wash.
Head smut, Ustilago bullata -- southern Wash.

BROMUS RIGIDUS Roth.
Head smut, Ustilago bullata -- southern Wash.
Leaf rust, Puccinia rubigo-vera -- southern and central Calif., southern Wash.
Stem rust, Puccinia graminis -- central Calif.

BROMUS RUBENS L.
Head smut, Ustilago bullata -- central Calif.
Leaf rust, Puccinia rubigo-vera -- central Calif.
Stem rust, Puccinia graminis -- central Calif.

BROMUS SECALINUS L.
Head smut, Ustilago bullata -- western Oreg.
Leaf spot, Septoria bromi -- northwest Idaho.

BROMUS SIBIRICUS Drobov (P.I. 111531).
Head smut, Ustilago bullata -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- central Calif.
Stem rust, Puccinia graminis -- central Calif.

BROMUS TECTORUM L.
Head smut, Ustilago bullata -- general west of Rockies.
Leaf rust, Puccinia rubigo-vera -- eastern Wash., central Calif.
Powdery mildew, Erysiphe graminis -- Lincoln, Nebr.
Root necrosis, Pythium irregulare -- Lincoln, Nebr.
Pythium proliferum -- Lincoln, Nebr.
Rootrot, Helminthosporium sativum -- Park River, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Kildeer Mts., N. Dak.
Stem rust, Puccinia graminis -- central Calif.

BROMUS TOMENTELLUS Boiss. (P.I. 111530).
Head smut, Ustilago bullata -- Pullman, Wash.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

BROMUS VULGARIS (Hook.) Shear
Head smut, Ustilago bullata -- Pullman, Wash.

BROMUS VULGARIS Cont.
Leaf rot, Hendersonia sp. -- Lake Itasca, Minn.
Leaf streak, Scolecotrichum graminis -- northern Idaho.

BUCHLOE DACTYLOIDES (Nutt.) Engelm.
Cercospora seed blight, Cercospora seminalis -- Mandan, N. Dak.
Leaf rot, Ascochyta phase of Hendersonia sp. -- Fargo, N. Dak.
Helminthosporium inconspicuum var. buchloës -- Nebr., Mont., N. Dak.
Rootrot, Curvularia geniculata -- Albion, Nebr.
Fusarium scirpi var. acuminatum -- Albion, Nebr.
Rhizoctonia solani -- Albion, Nebr.
Rust, Puccinia kansensis -- SCS nursery, North Platte, Nebr.

CALAMAGROSTIS CANADENSIS (Michx.) Beauv.
Anthracnose, Colletotrichum graminicolum -- Bismarck, Langdon, N. Dak.; Townsend, Mont.
Crown rust, Puccinia coronata -- Townsend, Mont.
Leaf rot, Hendersonia calamovilfae -- western S. Dak.
Leaf streak, Scolecotrichum graminis -- Langdon, N. Dak.
Red eye-spot, Mastigosporium rubricosum -- Yellowstone Park, Wyo.
Scald, Rhynchosporium orthosporum -- Yellowstone Park, Wyo.

CALAMAGROSTIS INEXPANSA A. Gray
Anthracnose, Colletotrichum graminicolum -- Lawton, N. Dak.
Ergot, Claviceps purpurea -- Lawton, N. Dak.

CALAMAGROSTIS RUBESCENS Buckl.
Anthracnose, Colletotrichum graminicolum -- Cornucopia, Oreg.

CALAMAGROSTIS SCRIBNERI Beal
Crown rust, Puccinia coronata -- Jackson L. For. Camp, Wyo.
Leaf spot, Selenophoma donacis var. -- Jackson Lake, Wyo.

CALAMOVILFA GIGANTEA (Nutt.) Scribn. and Merr.
Leaf spot, Hendersonia calamovilfae -- Pullman, Wash.

CALAMOVILFA LONGIFOLIA (Hook.) Scribn.
Leaf mold, Cladosporium herbarum -- Coburn, N. Dak.
Leaf rot and spot, Hendersonia calamovilfae -- Coburn, N. Dak.
Leaf spot, Septoria calamovilfae -- Wilton, N. Dak.
Selenophoma donacis -- Mandan, N. Dak., and vicinity.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Rust, Puccinia amphigena -- Wibaux, Mont., central N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

CHLORIS VIRGATA Swartz
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

CINNA LATIFOLIA (Trevir.) Griseb.
Leaf spot, Stagonospora arenaria -- Cornucopia, Oreg.; Tamarac Game Sanctuary, Minn.
Stem rust, Puccinia graminis -- Cornucopia, Oreg.

CYNODON DACTYLON (L.) Pers.
Rust, Puccinia cynodontis -- southern Calif.

DACTYLIS GLOMERATA L.
Bends, cause undet. -- Pullman, Wash., central Mont.
Ergot, Claviceps purpurea -- Corvallis, Oreg.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash., eastern Wash., western Oreg.
Mold, Wojnowicia graminis -- Mandan, N. Dak.
Powdery mildew, Erysiphe graminis -- southern Mont., eastern Wash.
Purple spot, Mastigosporium rubricosum -- Corvallis, Oreg.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Selenophoma stem speckle, Selenophoma donacis var. -- Pullman, Wash.
Stem rust, Puccinia graminis -- eastern Wash. and Bard, Calif.

DANTHONIA CALIFORNICA Boland.
Bends, cause undet. -- western Idaho.
Loose smut, Ustilago residua -- central Calif.

DANTHONIA CALIFORNICA var. AMERICANA (Scribn.) Hitchc.
Bends, cause undet. -- western Idaho.

DANTHONIA UNISPICATA (Thurb.) Munro
Bends, cause undet. -- Pullman, Wash.

DESCHAMPSIA ATROPURPUREA (Wahl.) Scheele
Selenophoma stem speckle, Selenophoma donacis var. -- Beartooth Pass in Mont.

DESCHAMPSIA CAESPITOSA (L.) Beauv.
Crown rust, Puccinia coronata -- western Oreg.
Ergot, Claviceps purpurea -- northeast Oreg.
Leaf blast, Cercosporella subulata -- Beartooth Pass, Wyo.
Stem rust, Puccinia graminis -- Pullman, Wash.
Selenophoma stem speckle, Selenophoma donacis var. -- Beartooth Pass in Wyo.

DESCHAMPSIA DANTHONIOIDES (Trin.) Munro
Bunt, Tilletia airae -- eastern Wash.
Stem rust, Puccinia graminis -- eastern Wash.

DESCHAMPSIA ELONGATA (Hook.) Munro
Bunt, Tilletia airae -- northwest Idaho, northwest Oreg.

DESCHAMPSIA ELONGATA Cont.
Leaf streak, Scolecotrichum graminis -- western Wash.
Rust, Uromyces jacksonii -- northern Idaho.
Selenophoma stem speckle, Selenophoma donacis var. -- eastern Wash., Pullman, Wash.
Stem rust, Puccinia graminis -- central Calif., northwest Idaho.

DIGITARIA SANGUINALIS (L.) Scop.
Anthracnose, Colletotrichum graminicolum -- Mandan, N. Dak.
Leaf rot, Curvularia geniculata -- Mandan, N. Dak.
Curvularia trifolii -- Mandan, N. Dak.
Mold, Helminthosporium sativum -- Mandan, N. Dak.
Secondary mold and rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

DISTICHLIS SPICATA (L.) Greene
Char spot, Dothidella aristidae -- northern Calif.

DISTICHLIS STRICTA (Torr.) Rydb.
Char spot, Dothidella aristidae -- northeast Oreg., northern Utah, central and eastern Wash., N. Dak., S. Dak.
Rust, Puccinia aristidae -- general from central Calif. to eastern N. Dak. and S. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- northern, central N. Dak.
Wojnowicia graminis -- Niagara, N. Dak.
Tar spot, Phyllachora sp. -- western N. Dak.

ECHINOCHLOA CRUSGALLI (L.) Beauv.
Root browning, Pythium aristosporum -- Dickinson, N. Dak.
Pythium arrhenomanes -- Dwight, Dickinson, N. Dak.
Root necrosis, Pythium debaryanum -- Langdon, N. Dak.
Rootrot, Fusarium culmorum -- Dickinson, N. Dak.
Helminthosporium sativum -- Fairmont, N. Dak.
Secondary rootrot, Curvularia geniculata -- Mandan, N. Dak.
Curvularia trifolii -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- Dickinson, Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.

ELYMUS AMBIGUUS Vasey & Scribn.
Ergot, Claviceps purpurea -- western Mont.

ELYMUS ANTARCTICUS Hook. f.
Bends, cause undet. -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS ARENARIUS L.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS CANADENSIS L.
Bends, cause undet. -- Pullman, Wash.
Brown stripe rust, Puccinia montanensis -- Pullman, Wash., southern Idaho, central Mont., Mandan, N. Dak.
Brown stripe smut, Tilletia sp. -- southern Mont.
Cat-tail disease, Epichloë typhina -- Pullman, Wash.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- central N. Dak.
Head smut, Ustilago bullata -- eastern Wash.
Leaf blotch, Septoria elymi -- Coburn, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., southern Mont., western and central N. Dak. (with Darluca filum).
Leaf spot, Ascochyta agropyrina -- Mandan, N. Dak.
Ascochyta elymi -- Solen, N. Dak.
Septoria sp. -- Leonard, N. Dak.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash., central Mont., northern Utah, central and northcentral N. Dak.
Powdery mildew, Erysiphe graminis -- western and central Mont.
Rootrot, Helminthosporium sativum -- Dickinson, Mandan, N. Dak.
Scald, Rhynchosporium secalis -- Pullman, Wash.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, Zap, N. Dak.
Rhizoctonia solani -- McCanna, Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash., Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash., central Mont.
Stripe smut, Ustilago macrospora -- Pullman, Wash., southern Mont.
Ustilago striaeformis -- Pullman, Wash.

ELYMUS CANADENSIS var. ROBUSTUS (Scribn. & Smith) McKenzie & Bush
Brown stripe rust, Puccinia montanensis (with parasite Darluca filum) -- Mandan, N. Dak.

ELYMUS CONDENSATUS Presl
Bends, cause undet. -- Pullman, Wash.
Brown stripe rust, Puccinia montanensis -- central Wash., Mandan, N. Dak.
Char spot, Septogloeum oxysporum -- eastern Wash., western Wyo., central and western Mont.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- central Calif., eastern Wash.
Ergot, Claviceps purpurea -- Pullman, Wash., central Wash., central and western Mont., northeast Oreg., Jackson, Wyo.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., and general in eastern and central Wash., northeast Oreg., central Calif., Mandan, N. Dak., Drummond, Mont.
Leaf spot, Heterosporium avenae -- Pullman, Wash.
Selenophoma donacis -- central Wash., Mandan, N. Dak., Livingston, Mont.
Septoria pacifica -- northwest Calif.

ELYMUS CONDENSATUS Cont.
Leaf spot, Septoria sp. -- western and central Mont., Jackson, Wyo.
Septoria infuscans -- central Wash.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash., western and central Mont.
Powdery mildew, Erysiphe graminis -- northeast Oreg., Jackson, Wyo.
Stem rust, Puccinia graminis -- Pullman, Wash., central Calif., Mandan (with associated Bacterium and Darluca filum) N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, eastern and central Wash., central Calif., central Mont., northern Oreg.
Stripe smut, Ustilago macrospora -- central Mont.

ELYMUS CONDENSATUS var. PUBENS Piper
Leaf rust, Puccinia rubigo-vera -- central Calif.
Leaf spot, Septoria sp. -- central Calif.
Stem rust, Puccinia graminis -- central Calif.
Stripe rust, Puccinia glumarum -- central Calif.

ELYMUS DAHURICUS Turcz. (P.I. 113124).
Cat-tail disease, Epichloë typhina -- Pullman, Wash.
Ergot, Claviceps purpurea -- Pullman, Wash.
Rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Helminthosporium sativum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.; Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

ELYMUS DASYSTACHYS Trin. (F.P.I. 113109).
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- central N. Dak.
Secondary rootrot, Macrophomina phaseoli -- Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

ELYMUS EXCELSUS Turcz.
Bends, cause undet. -- Pullman, Wash.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Covered smut, Ustilago hordei -- Pullman, Wash.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rot, Ascochyta agropyrina -- Mandan, N. Dak., Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS FLAVESCENS Scribn. & Smith
Leaf rust, Puccinia rubigo-vera -- central Wash.
Leaf spot, Selenophoma donacis -- central Wash.
Leaf streak, Scolecotrichum graminis -- Centennial Valley, Mont.

ELYMUS GIGANTEUS Vahl. (P.I. 108339).
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- southern Wash.
Leaf and sheath spot, Selenophoma donacis var. -- Pullman, Wash.

ELYMUS GLAUCUS Buckl.
Bends, cause undet. -- Pullman, Wash.
Brown stripe rust, Puccinia montanensis -- Pullman, Wash., Mandan, N. Dak.
Bunt, Tilletia elymi -- northeast Oreg.
Covered smut, Ustilago hordei -- Pullman, Wash.
Ergot, Claviceps purpurea -- Pullman, Wash., northeast Oreg., Mandan, N. Dak.
Head smut, Ustilago bullata -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash. (with parasite Darluca filum); central Calif., northern Oreg., southern Wash.
Leaf spot, Selenophoma donacis var. -- Pullman, Wash.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.; central Calif.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Seedling blight, cause undet. -- eastern Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.; central Calif.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.; central Calif.; northeast Oreg.
Stripe smut, Ustilago striaeformis -- Pullman, Wash.; northeast Oreg.

ELYMUS INTERRUPTUS Buckl.
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Mandan (also associated with Bacterium sp.), N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS JUNCEUS Fisch.
Bends, cause undet. -- central Mont.
Ergot, Claviceps purpurea -- central Mont.; Mandan, N. Dak. (in conidial form only).
Glume blotch, Septoria nodorum -- Langdon, N. Dak.
Grease spot, cause undet. -- Mandan, N. Dak.
Head smut, Ustilago bullata -- Pullman, Wash.; central Mont.; Mandan (from Pullman seed), N. Dak.
Joint disease, Bacterium sp. -- Mandan, N. Dak.
Leaf rust, Puccinia rubigo-vera -- western Calif.; Mandan, N. Dak. (Bacterium sp. and Darluca filum associated).

ELYMUS JUNCEUS Cont.
Powdery mildew, Erysiphe graminis -- central Mont., Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Pythium irregulare -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Langdon, N. Dak.
Secondary rootrot, Curvularia geniculata -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- Mandan, Dickinson, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Selenophoma stem speckle, Selenophoma donacis var. -- Mandan, Langdon, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash., central Mont., Mandan, N. Dak. (Bacterium associated), central S. Dak.

ELYMUS MACOUNII Vasey
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- western and southern Mont., central N. Dak.
Leaf spot, Ascochyta graminicola -- Townsend, Mont.
Ascochyta graminicola var. brachypodii -- Mandan, N. Dak.
Septoria sp. (not elymi) -- Ft. Totten, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash., Mandan, N. Dak.

ELYMUS PSEUDOAGROPYRON (Griseb.) Trin. (P.I. 135580).
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.

ELYMUS SABULOSUS Bieb. (A 74 from Pima, Ariz. S.C.S. 1938).
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS SALINA Jones
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS SALSUGINOSUS Turcz. (P.I. 111554).
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Mandan, N. Dak.

ELYMUS SIBIRICUS L. (P.I. 131578).
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Mandan, N. Dak.

ELYMUS SIBIRICUS Cont.
Head smut, Ustilago bullata -- southern Idaho.
Leaf rust, Puccinia rubigo-vera -- western Oreg., Mandan, N. Dak.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.
Powdery mildew, Erysiphe graminis -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash., Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum (with parasite Darluca filum), Pullman, Wash.

ELYMUS TRITICOIDES Buckl.
Char spot, Septogloeum oxysporum -- northern Calif.
Ergot, Claviceps purpurea -- Pullman, Wash., northern Calif.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., southern Calif., western Calif., western Oreg.
Leaf spot, Septoria elymi-europaei -- northern Calif.
Stagonospora arenaria -- northern Calif.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan (with Darluca filum), N. Dak., northern Calif.
Stripe rust, Puccinia glumarum -- Pullman, Wash., western Oreg.

ELYMUS VIRESCENS Piper
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ELYMUS VIRGINICUS L.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Bozeman, Mont., Mandan, N. Dak.
Leaf spot, Ascochyta agropyrina -- Mandan, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

ERAGROSTIS CURVULA (Schrad.) Nees. (Pima, Ariz. D.G.-69-37).
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.

ERAGROSTIS PILOSA (L.) Beauv.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

FESTUCA CALIFORNICA Vasey
Stem rust, Puccinia graminis -- western Calif.

FESTUCA DERTONENSIS (All.) Aschers. & Graebn.
Bunt, Tilletia fusca -- eastern Wash.
Smut, Ustilago mulfordiana -- eastern Wash.

FESTUCA ELATIOR L.
Bends, cause undet. -- Pullman, Wash.
Crown rust, Puccinia coronata -- western Calif.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Pythium irregulare -- Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, ? Aphanomyces sp. -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash., central Mont., northeast and western Oreg.

FESTUCA ELATIOR var. ARUNDINACEA (Schreb.) Wimm.
Bends, cause undet. -- Pullman, Wash.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Corvallis, Ore.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.

FESTUCA IDAHOENSIS Elmer
Bends, cause undet. -- Pullman, Wash., northern Wyo.
Ergot, Claviceps purpurea -- northern Idaho.
Leaf rust, Puccinia crandallii -- Pullman (with parasite Darluca filum), northern Idaho.
Leaf spot, Septoria tenella -- Yellowstone, Park, Wyo.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Selenophoma spot, Selenophoma donacis var. -- Lyle, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.

FESTUCA MEGALURA Nutt.
Stem rust, Puccinia graminis -- central Calif.

FESTUCA OCTOFLORA Walt.
Bunt, Tilletia fusca -- central and eastern Wash.
Leaf spot, Septoria tenella -- Kildeer Mts. and area, N. Dak.
Rootrot, Helminthosporium sativum -- western N. Dak.
Secondary rootrot, Rhizoctonia solani -- western N. Dak.
Smut, Ustilago mulfordiana -- central Mont., central, eastern and southern Wash.

FESTUCA OVINA L.
Bends, cause undet. -- Pullman, Wash.
Leaf rust, Puccinia crandallii -- Pullman, Wash., Jackson L., Wyo.
Leaf spot, Selenophoma donacis -- southern Wash.
Septoria tenella -- Yellowstone Park, Wyo.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

FESTUCA OVINA var. BRACHYPHYLLA (Schult.) Piper
Selenophoma stem speckle, Selenophoma donacis var. -- Beartooth Pass in Wyo.

FESTUCA PACIFICA Piper
Bends, cause undet. -- central Wash.
Bunt, Tilletia fusca -- central and eastern Wash.
Smut, Ustilago mulfordiana -- central, eastern and southern Wash.

FESTUCA RUBRA L.
Ergot, Claviceps purpurea -- Pullman, Wash. and Corvallis, Oreg.
Leaf rust, Puccinia crandallii (with parasite Darluca filum) -- Pullman, Wash., western Oreg.
Leaf spot, Ascochyta graminicola -- Mandan, N. Dak.
Secondary rootrot, ? Aphanomyces sp. -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Selenophoma stem speckle, Selenophoma donacis var. -- Beartooth Pass in Mont.
Stem rust, Puccinia graminis -- Pullman, Wash., central Calif.
Tar spot, Phyllachora sylvatica -- western Oreg.

FESTUCA RUBRA var. COMMUTATA Gaud.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf spot, Septoria tenella -- western Oreg.
Powdery mildew, Erysiphe graminis -- western Oreg.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.

FESTUCA RUBRA var. LANUGINOSA Mert. & Koch
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- Pullman, Wash.

FESTUCA SCABRELLA Torr.
Leaf rust, Puccinia cockerelliana -- Pullman, Wash.

FESTUCA SUBULATA Trin.
Stem rust, Puccinia graminis -- northeast Oreg.

FESTUCA THURBERI Vasey
Bends, cause undet. -- Pullman, Wash.

FESTUCA VIRIDULA Vasey
Leaf rust, Puccinia crandallii -- Pullman, Wash.

GLYCERIA ELATA (Nash) Hitchc.
Leaf spot, Septoria nodorum -- northeast Oreg.
Leaf streak, Scolecotrichum graminis -- eastern Wash.

GLYCERIA GRANDIS S. Wats.
Leaf smut, Ustilago longissima -- northern Idaho, central Mont., northeast Oreg.

GLYCERIA PAUCIFLORA Presl
Leaf spot, Septoria nodorum -- Cascade Mts., Wash.
Stem rust, Puccinia graminis -- western Idaho.

GLYCERIA STRIATA (Lam.) Hitchc.
Leaf rot, Stagonospora sp. -- Niawa, Minn.

HESPEROCHLOA KINGII (S. Wats.) Rydb.
Selenophoma stem speckle, Selenophoma donacis var. -- Beartooth Pass. in Mont.

HIEROCHLOE ODORATA (L.) Beauv.
Leaf rot (trace), Helminthosporium sp. -- northern Calif.
Leaf spot, Ascochyta graminicola -- Rapid City, S. Dak.
Stem rust, Puccinia graminis (with Darluca) -- northern Calif.

HILARIA JAMESII (Torr.) Benth.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

HILARIA MUTICA (Buckl.) Benth.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

HOLCUS LANATUS L.
Crown rust, Puccinia coronata -- western Wash.; western, northern and central Calif.

HORDEUM BREVISUBULATUM (Trin.) Link (P.I. 131539).
Bacterial spot, Bacterium translucens -- Mandan, N. Dak.
Bends, cause undet. -- eastern Wash.
Brown stripe rust, Puccinia montanensis -- Mandan, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Mandan, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

HORDEUM BULBOSUM L. (P.I. 107361).
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Tucson, Ariz. and Pullman, Wash.

HORDEUM JUBATUM L.
Brown stripe rust, Puccinia montanensis -- southern Mont.
Ergot, Claviceps purpurea -- northeast Oreg.
Flag smut, Urocystis agropyri -- northeast Oreg.
Head smut, Ustilago bullata -- western Mont., northeast Oreg., northern Utah.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash., northeast Oreg., N. Dak.

HORDEUM JUBATUM Cont.
Leaf spot, Septoria passerinii -- common in N. Dak.
Leaf streak, Scolecotrichum graminis -- Marion, Sydney, and western Mont.; East Grand Forks, Minn.; central N. Dak.
Loose smut, Ustilago sitanii -- southern Wash.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Fusarium scirpi var. compactum -- Emerado, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- common from central Wash. to Minn.
Stripe rust, Puccinia glumarum -- eastern Wash.

HORDEUM JUBATUM var. CAESPITOSUM (Scribn.) Hitchc.
Ergot, Claviceps purpurea -- western and southern Mont.
Head smut, Ustilago bullata -- western Mont.
Leaf rust, Puccinia rubigo-vera -- central Wash.
Leaf streak, Scolecotrichum graminis -- southern Wash.
Loose smut, Ustilago sitanii -- southern Wash.
Stripe rust, Puccinia glumarum -- western Mont., eastern and central Wash.

HORDEUM MURINUM L.
Leaf rust, Puccinia hordei, with parasite Darluca filum -- eastern Wash.
Stem rust, Puccinia graminis -- eastern Wash.
Stripe rust, Puccinia glumarum -- eastern Wash.

HORDEUM NODOSUM L.
Head smut, Ustilago bullata -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera (with parasite Darluca filum), western Idaho, northeast Oreg.
Leaf spot, Septoria passerinii -- Sydney, Mont.
Leaf streak, Scolecotrichum graminis -- Marion, Mont., southern Mont.
Stem rust, Puccinia graminis -- western Idaho.
Stripe rust, Puccinia glumarum -- Pullman, Wash.; western Idaho; northeast Oreg.

HORDEUM SPONTANEUM C. Koch
Leaf rust, Puccinia anomala -- western Calif.

KOELERIA CRISTATA (L.) Pers.
Bends, cause undet. -- Pullman, Wash.
Leaf rust, Puccinia koeleriae -- Pullman, Wash. (with parasite Darluca filum); central Mont.; western Oreg.
Leaf spot, Septoria calamagrostidis f. koeleriae -- Pullman, Wash.; northern Wyo.
Leaf streak, Scolecotrichum graminis -- Jackson, Wyo.; Steele, N. Dak.

KOELERIA CRISTATA Cont.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Secondary rootrot, Curvularia geniculata -- Yates, Mont.
Fusarium scirpi var. acuminatum -- Steele, N. Dak.
Rhizoctonia solani -- Steele, N. Dak.
Sheath and leaf spot, Selenophoma donacis var. -- Pullman, Wash.; Gardner, Langdon, N. Dak.; Jackson, Wyo.
Stem rust, Puccinia graminis -- western Calif.; northeast Oreg.

LOLIUM MULTIFLORUM Lam.
Anthracnose, Colletotrichum graminicolum -- Corvallis, Oreg.
Crown rust, Puccinia coronata -- Corvallis, Oreg.; southern, western and central Calif.
Ergot, Claviceps purpurea -- northern Calif. and Corvallis, Oreg.
Rootrot, Rhizoctonia solani -- Mandan, N. Dak.

LOLIUM PERENNE L.
Anthracnose, Colletotrichum graminicolum -- Corvallis, Oreg.
Chocolate spot, Bacterium coronafaciens atropurpureum -- Corvallis, Oreg.
Crown rust, Puccinia coronata -- southern, western and central Calif.
Ergot, Claviceps purpurea -- northern Calif. and Corvallis, Oreg.
Leaf spot, Ascochyta lolii (Zimm.) Spr. & John. -- northern Calif.

LOLIUM REMOTUM Schrank
Crown rust, Puccinia coronata -- western and central Calif.

LOLIUM SUBULATUM Visiani
Crown rust, Puccinia coronata -- western Calif.

MELICA ARISTATA Thurb.
Stem rust, Puccinia graminis -- central Calif.

MELICA BULBOSA Geyer
Leaf blast, Cercosporella subulata -- northwest Wyo.
Twist disease, Dilophospora alopecuri -- northwest Wyo.

MELICA CALIFORNICA Scribn.
Powdery mildew, Erysiphe graminis -- central Calif.

MELICA GEYERI Munro
Leaf streak, Scolecotrichum graminis -- northwest Wyo.

MELICA HARFORDII Boland.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

MICHEL'S GRASS (SECALE sp.)
Ergot, Claviceps purpurea -- McCanna, Mandan, N. Dak.
Leaf rust, Puccinia rubigo-vera -- Pullman, eastern Wash.; Bard and western Calif.; northeast and western Oreg.; Mandan, N. Dak.

MICHEL'S GRASS Cont.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.

MUHLENBERGIA CUSPIDATA (Torr.) Rydb.
Tar spot, Phyllachora vulgata -- north of Beach, N. Dak.

MUHLENBERGIA JAPONICA Steud. (P.I. 135606).
Secondary rootrot, Curvularia geniculata -- Mandan, N. Dak.
Helminthosporium halodes -- Mandan, N. Dak.

MUHLENBERGIA MEXICANA (L.) Trin.
Leaf spot, Septoria sp. -- Lake Itasca, Minn.

MUHLENBERGIA RACEMOSA (Michx.) B.S.P.
Root browning, Pythium arrhenomanes -- Lake Itasca, Minn.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Itasca Park, Minn.

ORYZOPSIS HYMENOIDES (Roem. and Schult.) Ricker.
Bends, cause undet. -- Pullman, Wash.; northern Wyo.
Damping-off, Pythium debaryanum -- McCanna, N. Dak.
Leaf spot, Stagonospora arenaria -- Terry, Mont.
Root browning, Pythium arrhenomanes -- Mandan, McCanna, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, McCanna, Dickinson, N. Dak.
Rust, Puccinia scaber, with Darluca filum -- central Mont.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, McCanna, Dickinson, N. Dak.
Rhizoctonia solani -- Mandan, Dickinson, McCanna, N. Dak.
Selenophoma stem speckle, Selenophoma donacis var. -- Roosevelt Park, N. Dak.; Terry, Mont.
Sheath and leaf streak, Scolecotrichum graminis -- Pullman, Wash.
Stem smut, Ustilago hypodytes -- Pullman, central Wash.; central and western Mont.; western Wyo.; northern Utah.
Ustilago sp.9/ -- northern and western Wyo., including Yellowstone Park.

ORYZOPSIS MILIACEA (L.) Benth. and Hook.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.

PANICUM CAPILLARE L.
Bacterial eye-spot, Bacterium holci -- Mandan, N. Dak.
Leaf spot, Helminthosporium sp. -- western Idaho.
Loose smut, Sorosporium syntherismae -- western Idaho; central N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.

9/ Found also on several species of Stipa, and reported herein. Under investigation at Pullman, Wash.

PANICUM CAPILLARE Cont.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Dickinson, Mandan, N. Dak.
Rhizoctonia solani -- Mandan, Dickinson, N. Dak.

PANICUM DICHOTOMIFLORUM Michx.
Rootrot, Fusarium scirpi var. acuminatum -- Norfolk, Nebr.

PANICUM FLEXILE (Gattinger) Scribn.
Leaf spot, Helminthosporium sp. -- Tokio, N. Dak.

PANICUM MILIACEUM L.
Bacterial eye-spot, Bacterium holci -- Langdon, Leonard, N. Dak.
Root browning, Pythium arrhenomanes -- New Salem, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, New Salem, Richardton, N. Dak.
Smut, Sorosporium syntherismae -- Mandan, N. Dak.

PANICUM VIRGATUM L.
Damping-off, Pythium debaryanum -- Albion, Nebr.
Leaf spot, Ascochyta sp. -- near Wilton, N. Dak.
Cercospora fusimaculans -- Coburn, N. Dak.
Rootrot, Helminthosporium sativum -- Albion, Nebr.
Secondary rootrot, Curvularia geniculata -- Albion, Nebr.
Fusarium scirpi var. acuminatum -- Albion, Nebr.; Mandan, N. Dak.
Selenophoma speckle, Selenophoma donacis -- Coburn, Mandan, N. Dak.
Stomatal leaf drown, cause, excess rain plus Bacterium sp. -- Mandan, N. Dak.

PHALARIS ARUNDINACEA L.
Crown rust, Puccinia coronata -- southern Wash.
Purple leaf spot, Stagonospora arenaria -- Bismarck, N. Dak.; Hecla, S. Dak.
Root necrosis, Pythium debaryanum -- Bismarck, N. Dak.
Rust, Puccinia sessilis -- Mandan, N. Dak.
Selenophoma speckle and leaf spot, Selenophoma donacis -- Lower Souris Game Sanctuary, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

PHALARIS CALIFORNICA Hook. & Arn.
Stem rust, Puccinia graminis -- central Calif.

PHALARIS MINOR Retz.
Stem rust, Puccinia graminis -- central Calif.

PHALARIS TUBEROSA L.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

PHLEUM BOEHMERI Wibel. = P. PHLEOIDES

PHLEUM GRAECUM Boiss. & Heldr.
Stem rust, Puccinia graminis -- Pullman, Wash.

PHLEUM PHLEOIDES (L.) Karst. (includes P. BOEHMERI Wibel.)(E. Kasakstan W 356; U.S.S.R. W 2490).
Leaf spot, Heterosporium phlei -- Pullman, Wash.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.; northwest Calif.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

PHLEUM PRATENSE L.
Bends, cause undet. -- Pullman, Wash.
Leaf spot, Ascochyta sp. -- Niawa, Minn.
Heterosporium phlei -- Pullman, Wash.; northern and western Idaho; western Oreg.; Niawa, Minn.
Leaf streak, Scolecotrichum graminis -- western Idaho; central Mont.; western Oreg.; southern Wyo.; western Minn.
Rootrot, Fusarium scirpi var. acuminatum -- Mandan, McCanna, N. Dak.
Rhizoctonia solani -- McCanna, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.; central Mont.; western Oreg.
Stripe smut, Ustilago striaeformis -- Pullman, Wash.; western Calif.; western Idaho; central Mont.; northern Oreg.; eastern Wash.

PHRAGMITES COMMUNIS Trin.
Rootrot, Pythium debaryanum -- Bismarck, N. Dak.
Pythium ultimum -- Bismarck, N. Dak.
Rust, Puccinia magnusiana -- west of Cleveland, N. Dak.

POA ALPINA L.
Leaf rust, Puccinia poae-sudeticae -- southern Mont.
Selenophoma stem speckle, Selenophoma donacis var. -- Beartooth Pass in Mont.

POA AMPLA Merr.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Pythium ultimum -- McCanna, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.; northern Idaho.
Flag smut, Urocystis agropyri -- northwest Wyo.
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash. (with parasite Darluca filum); northeast Oreg. (also with Darluca filum).
Puccinia rubigo-vera -- Pullman, Wash. and general in eastern and southern Wash.; southern Idaho; northeast Oreg., central Oreg.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.; central Mont.
Selenophoma stem speckle and leaf spot, Selenophoma donacis var. -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, central Wash.; northeast Oreg.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

POA ANNUA L.
Head mold, Fusarium sp. -- Ft. Steilacoom, Wash.
Leaf rust, Puccinia poae-sudeticae -- western Calif.
Leaf spot, Septoria macropoda -- Ft. Steilacoom, Wash.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

POA ARIDA Vasey
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.; (with parasite Darluca filum), Mandan, N. Dak.
Leaf spot, Selenophoma donacis var. -- Mandan, N. Dak.
Powdery mildew, Erysiphe graminis -- Mandan, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

POA ARCTICA R. Br.
Selenophoma stem speckle, Selenophoma donacis var. -- Cooke City, Mont.

POA BULBOSA L.
Damping-off, Pythium debaryanum -- McCanna, N. Dak.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.
Rootrot, Helminthosporium sativum -- McCanna, N. Dak.
Secondary rootrot, Rhizoctonia solani -- McCanna, N. Dak.

POA CANBYI (Scribn.) Piper
Bends, cause undet. -- Pullman, Wash.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.; Mandan, N. Dak.
Puccinia rubigo-vera -- central Calif.; southern Idaho.
Leaf spot, Septoria oudemansii -- Mandan, N. Dak.
Leaf streak, Scolecotrichum graminis -- western N. Dak.; eastern Mont.
Powdery mildew, Erysiphe graminis -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.; central Calif.
Stripe smut, Ustilago striaeformis -- near Mandan, N. Dak.

POA COMPRESSA L.
Cat-tail disease, Epichloë typhina -- New Rockford, N. Dak.
Leaf rust, Puccinia poae-sudeticae -- Wild Rice, N. Dak. (with rust parasitized by Fusarium avenaceum).
Leaf spot, Helminthosporium vagans -- Wild Rice, N. Dak.
Septoria oudemansii -- Wild Rice, N. Dak.
Leaf spot, mold and blotch, Hendersonia crastophila -- Clyde, N. Dak.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.; N. Dak.; S. Dak.; Mont.; Minn.
Powdery mildew, Erysiphe graminis -- central Mont.
Seed mold, Cladosporium herbarum -- Wild Rice, N. Dak.
Curvularia geniculata -- Lake Lida, Minn.; Wild Rice, N. Dak.
Selenophoma stem speckle, Selenophoma donacis var. -- 2 miles north of Nekoma, N. Dak.

POA CURTA Rydb.
Leaf rust, Puccinia poae-sudeticae, with parasite Darluca filum -- Pullman, Wash.

POA CUSICKII Vasey
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash. (with parasite Darluca filum) -- western Wyo.
Puccinia rubigo-vera with parasite Darluca filum -- Pullman, Wash.
Powdery mildew, Erysiphe graminis -- northern Wyo.
Stem rust, Puccinia graminis -- Pullman, Wash.

POA EPILIS Scribn.
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.; western Wyo.
Leaf streak, Scolecotrichum graminis -- northern Wyo.
Selenophoma stem speckle, Selenophoma donacis var. -- northern Wyo.
Stem rust, Puccinia graminis -- Pullman, Wash.

POA GLAUCIFOLIA Scribn. & Will.
Powdery mildew, Erysiphe graminis -- Mandan, N. Dak.
Stem rust, Puccinia graminis (with associate Bacterium sp.) -- S.C.S. Nursery, North Platte, Nebr.

POA GRACILLIMA Vasey
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.

POA INTERIOR Rydb.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.
Selenophoma stem speckle and leaf spot, Selenophoma donacis var. -- south of Red Lodge, Mont.
Stem rust, Puccinia graminis -- Pullman, Wash.

POA JUNCIFOLIA Scribn.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.
Puccinia rubigo-vera -- southern Idaho.
Stem rust, Puccinia graminis -- Pullman, Wash.

POA LONGIFOLIA Trin.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.

POA NEMORALIS L.
Bends, cause undet. -- Pullman, Wash.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rust, Puccinia poae-sudeticae -- western Oreg.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.

POA NERVOSA (Hook.) Vasey
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.

POA NEVADENSIS Vasey
Bends, cause undet. -- Pullman, Wash.
Leaf rust, Puccinia poae-sudeticae, with parasite Darluca filum -- Pullman, Wash.; western Calif.
Puccinia rubigo-vera -- western Calif.; southern Idaho.
Leaf spot, Septoria oudemansii -- Fargo, N. Dak.
Leaf streak, Scolecotrichum graminis -- northwest Wyo.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.; Fargo, N. Dak.
Stem smut, Ustilago hypodytes -- Pullman, Wash.

POA PALUSTRIS L.
Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Ergot, Claviceps purpurea -- Blaisdell, N. Dak.
Glume and sheath blotch, Septoria nodorum -- western S. Dak.
Leaf rust, Puccinia poae-sudeticae (with parasite Darluca filum) -- Pullman, Wash.; southern Mont.; N. Dak.; S. Dak.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.; southern Mont.; northern Wyo.; central N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Rhizoctonia solani -- Lake Itasca, Minn.

POA PRATENSIS L.
Anthracnose, Colletotrichum graminicolum -- Roosevelt Park, N. Dak.; Webster, S. Dak.
Brown patch, Rhizoctonia solani -- Albion, Norfolk, Nebr.; western Minn.
Ergot, Claviceps purpurea -- central Mont.
Leaf mottle, Septoria macropoda var. septulata -- general from Puget Sound to the Mississippi River.
Leaf rot, Fusarium graminearum -- Jackson, Wyo.
Leaf rust, Puccinia poae-sudeticae -- Tucson, Ariz., Pullman, Wash. (with Darluca filum); central Mont. (also with Darluca filum); southern Mont.; western Idaho; western Oreg. (with Darluca filum); eastern and southern Wash.; central Calif.; general east of Rockies.
Leaf spot, Ascochyta graminicola -- Fargo, N. Dak.
Helminthosporium vagans -- Pullman, eastern Wash.; general in moister places in Great Plains.
Septoria oudemansii -- western Idaho; Newman Grove, Nebr.; Fargo and Lawton, N. Dak.; Itasca Park, Minn.; Mt. Shasta, Calif. (Cooke).
Stagonospora sp. -- Laporte, Minn.
Leaf streak, Scolecotrichum graminis -- Wibaux, Mont.
Powdery mildew, Erysiphe graminis -- eastern Wash.; western and southern Mont.; Mt. Shasta, Calif.; general in N. Dak., and in western Minn.

POA PRATENSIS Cont.

Rootrot, Helminthosporium sativum -- Devils Lake, Fargo, Harwood, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Nebr.; S. Dak.; N. Dak.
Seed molds, Hendersonia spp.; Sphaeropsis sp. (N. Dak. only); Wojnowicia graminis; Mycosphaerella tulasnei -- N. Dak.; Mont.; Wyo.
Selenophoma speckle, Selenophoma donacis var. -- Fargo, N. Dak.; Red Lodge, Livingston, Mont.; Jackson, Wyo.
Stripe smut, Ustilago striaeformis -- eastern Wash.

POA SCABRELLA (Thurb.) Benth.

Leaf rust, Puccinia poae-sudeticae (with parasite Darluca filum) -- Pullman, Wash., and central Calif.
Puccinia rubigo-vera -- western Calif.; southern Idaho.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Stem rust, Puccinia graminis -- central Calif.

POA SECUNDA Presl

Bends, cause undet. -- Pullman, Wash.
Black leaf rust, Uromyces dactylidis -- western N. Dak.
Cat-tail disease, Epichloë typhina -- Little Missouri River, N. Dak.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf spot, Septoria macropoda var. grandis -- Kildeer Mts., N. Dak.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.
Puccinia rubigo-vera -- western Calif.; southern Idaho.
Leaf smut, Ustilago sp.[10] -- northeast Oreg.
Leaf streak, Scolecotrichum graminis -- Kildeer Mts., N. Dak.
Powdery mildew, Erysiphe graminis -- Pullman, Wash.
Root necrosis, Pythium debaryanum -- Grassy Butte, Zap, N. Dak.
Pythium ultimum -- Grassy Butte, N. Dak.
Rootrot, Helminthosporium sativum -- central N. Dak.
Selenophoma speckle, Selenophoma donacis var. -- S. Roosevelt Park, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.; northwest Calif.
Stripe smut, Ustilago striaeformis -- western Wyo.

POA STENANTHA Trin.

Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.

POA SYLVESTRIS A. Gray

Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.

10/ Under investigation at Pullman, Wash.

POA TIBETICA Munro
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.

POA TRIVIALIS L.
Leaf rust, Puccinia poae-sudeticae -- Pullman, Wash.

POA VASEYOCHLOA Scribn.
Leaf rust, Puccinia poae-sudeticae with parasite Darluca filum -- Pullman, Wash.

POLYPOGON MONSPELIENSIS (L.) Desf.
Crown rust, Puccinia coronata -- central Calif.
Powdery mildew, Erysiphe graminis -- central Calif., eastern and central Wash.

PUCCINELLIA DISTANS (L.) Parl.
Ergot, Claviceps purpurea -- Pullman, Wash.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Stem rust, Puccinia graminis -- Pullman, Wash.

PUCCINELLIA LEMMONI (Vasey) Scribn.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

PUCCINELLIA LIMOSA (Schur) Holmb. (P.I. 125281).
Stripe rust, Puccinia glumarum -- Pullman, Wash.

PUCCINELLIA NUTKAENSIS (Presl) Fern. & Weath.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

PUCCINELLIA NUTTALIANA (Schult.) Hitchc.
Leaf rust, Puccinia poae-sudeticae (with parasite Darluca filum) -- Pullman, Wash.
Puccinia rubigo-vera -- Pullman, Wash.; northeast Oreg.; Mandan, N. Dak. (with parasite Darluca filum).
Stem rust, Puccinia graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

SCHEDONNARDUS PANICULATUS (Nutt.) Trel.
Rust, Puccinia schedonnardi -- Mandan, N. Dak.

SCHIZACHNE PURPURASCENS (Torr.) Swallen
Anthracnose, Colletotrichum graminicolum -- Itasca Park, Minn.
Leaf rot, Hendersonia sp. -- Itasca Park, Minn.
Leaf spot, Phyllosticta sp. -- Itasca Park, Minn.

SCOLOCHLOA FESTUCACEA (Willd.) Link. (Fluminea festucacea (Willd.) Hitchc.)
Grey spot, Piricularia grisea -- Nekoma, N. Dak.
Purple leaf spot, Stagonospora arenaria -- New Effington, Nekoma, N. Dak.

SECALE CEREALE x S. MONTANUM
Ergot, Claviceps purpurea -- Pullman, Wash.
Stem smut, Ustilago hypodytes -- eastern Wash.

SECALE MONTANUM Guss.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.
Leaf scald, Rhynchosporium secalis -- Pullman, Wash.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

SETARIA ITALICA (L.) Beauv.
Bacterial eye-spot, Bacterium holci -- Grand Forks, Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, Roth, N. Dak.; Sisseton, S. Dak.
Root necrosis and Damping-off, Pythium debaryanum -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Langdon, N. Dak.; Malloy, Minn.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Langdon, Mandan, N. Dak.

SETARIA LUTESCENS (Weigel) F. T. Hubb.
Kernel smut, Ustilago neglecta -- northern Utah.
Rootrot, Helminthosporium sativum -- Buxton, Fargo, N. Dak.

SETARIA VIRIDIS (L.) Beauv.
Bacterial leaf spot, Bacterium sp. -- general in N. Dak.
Damping-off, Pythium debaryanum -- Fargo, McCanna, N. Dak.; White Rock, S. Dak.; Arago, Minn.
Downy mildew, Sclerospora graminicola -- Langdon, N. Dak.
Grey leaf spot, Piricularia grisea -- general in N. Dak.
Red eye-spot, Phyllosticta sorghina -- Langdon, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, St. Anthony, Yucca, McCanna, Driscoll, Sheyenne, N. Dak.; Sprague Siding, Minn.; White Rock, S. Dak.
Rootrot, Helminthosporium sativum -- Arvilla, Fargo, N. Dak.
Rhizoctonia solani -- Fargo, N. Dak.
Secondary rootrot, Curvularia geniculata -- Arago, Minn.; New Salem, Richardton, N. Dak.
Fusarium moniliforme -- Dickinson, N. Dak.
Fusarium scirpi var. acuminatum -- Fargo, Sheyenne, N. Dak.; Lily, White Rock, S. Dak.
Helminthosporium halodes -- Sisseton, White Rock, S. Dak.
Helminthosporium monoceras -- New Salem, Minot, N. Dak.
Helminthosporium turcicum -- Sisseton, S. Dak.

SITANION HANSENI (Scribn.) J. G. Smith
Leaf spot, Selenophoma sp. -- Mt. Shasta, Calif.
Rust, Puccinia pattersoniana -- central Calif.
Leaf streak, Scolecotrichum graminis -- Mt. Shasta, Calif.
Stripe rust, Puccinia glumarum -- western Oreg.; Mt. Shasta, Calif.

SITANION HYSTRIX (Nutt.) J. G. Smith
Ergot, Claviceps purpurea -- northeast Oreg., western Oreg.
Leaf rust, Puccinia rubigo-vera -- northern Idaho; Utah; western Wyo.
Leaf spot, Scolecotrichum graminis -- western and southcentral Mont.
Rust, Puccinia pattersoniana -- northern Idaho.
Selenophoma stem speckle, Selenophoma donacis -- central Mont.
Sheath and leaf spot, Selenophoma sp. -- northern Utah.
Stripe rust, Puccinia glumarum -- northeast Oreg.; northern Wyo.

SITANION JUBATUM J. G. Smith
Loose smut, Ustilago sitanii -- southern Wash.
Rust, Puccinia pattersoniana -- central Wash.
Stem rust, Puccinia graminis -- northern Idaho.
Stem smut, Ustilago hypodytes -- Pullman, Wash.
Stripe rust, Puccinia glumarum -- Pullman, Wash.; western Calif.
Twist disease, Dilophospora alopecuri -- southern Wash.
Yellow bacterial head blight, Aplanobacter agropyri -- southern Wash.

SORGHASTRUM NUTANS (L.) Nash
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.

SORGHUM HALEPENSE (L.) Pers.
Bacterial eye-spot, Bacterium holci -- Mandan, N. Dak.
Smut, Sphacelotheca cruenta -- southern Calif.
Sphacelotheca sorghi -- central Ariz.; Huron, S. Dak.

SORGHUM VULGARE Pers.
Bacterial eye-spot, Bacterium holci -- general in central and eastern N. Dak.
Root browning (Milo disease), Pythium arrhenomanes -- Mandan, McCanna, N. Dak.
Root necrosis, Pythium debaryanum -- Mandan, Minot, N. Dak.
Rootrot, Helminthosporium sativum -- Surrey, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.

SORGHUM VULGARE var. SUDANENSE (Piper) Hitchc.
Bacterial eye-spot, Bacterium holci -- Langdon, Devil's Lake, Mandan, N. Dak.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Root necrosis, Pythium debaryanum -- Wild Rice, Devil's Lake, Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Hebron, Wild Rice, N. Dak.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Helminthosporium turcicum -- Hebron, N. Dak.

SPARTINA GRACILIS Trin.
Rust, Puccinia distichlidis, with parasite Darluca filum -- Townsend, Mont.

SPARTINA PECTINATA Link
Leaf spot, Ascochyta spartinae 11/ -- central S. Dak.
Rust, Puccinia peridermiospora -- Fargo, Mandan, N. Dak.

SPHENOPHOLIS OBTUSATA (Michx.) Scribn.
Rust, Puccinia eatoniae -- Mandan, N. Dak.

SPODOPOGON SIBIRICUS Trin. (P.I. 135626).
Bacterial leaf streak, Bacterium andropogonii -- Mandan, N. Dak.

SPOROBOLUS AIROIDES (Torr.) Torr.
Bacterial slime blight, Aplanobacter sp. -- Mandan, N. Dak.
Bends, cause undet. -- Pullman, Wash.
Leaf spot, Ascochyta stipae -- Pullman, Wash.
Hendersonia simplex -- Pullman, Wash.

SPOROBOLUS ASPER (Michx.) Kunth
Leaf spot, Hendersonia simplex -- Pullman, Wash.

SPOROBOLUS CRYPTANDRUS (Torr.) A. Gray
Rust, Puccinia simulans -- western Idaho; southern Mont.; Fargo, N. Dak.

SPOROBOLUS FLEXUOSUS (Thurb.) Rydb.
Bacterium sp. leaf spot -- Mandan, N. Dak.

SPOROBOLUS HETEROLEPIS (A. Gray) A. Gray
Anthracnose, Colletotrichum graminicolum -- Buffalo, N. Dak.

SPOROBOLUS NEGLECTUS Nash
Secondary rootrot, Curvularia geniculata -- Mandan, N. Dak.

STIPA BAICALENSIS Roshev. (P.I. 135627).
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.

STIPA CERNUA Stebbins & Love
Stem smut, Ustilago sp. -- central Calif.

STIPA COLUMBIANA Macoun
Leaf streak, Scolecotrichum graminis -- northeast Oreg.
Secondary rootrot, Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Stripe rust, Puccinia glumarum -- Pullman, Wash.

STIPA COMATA Trin. & Rupr.
Chocolate spot, Bacterium coronafaciens var. atropurpureum -- southern Mont.; 20 miles south of Big Timber, Mont.
Leaf spot, Selenophoma donacis -- north of Wibaux, Mont.; near Beach, N. Dak.

11/ A species of Septoria, under investigation at Mandan, N. Dak.

STIPA COMATA Cont.
Leaf streak, Scolecotrichum graminis -- Bradley, S. Dak.
Root browning, Pythium arrhenomanes -- Mandan, Park River, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Rust, Puccinia scaber -- central Mont.
Puccinia stipae -- Pullman, Wash.; central Mont.; northeast Oreg.; central and eastern Wash.; western Wyo.; S. Roosevelt Park, N. Dak.
Secondary rootrot, Curvularia geniculata -- Mandan, N. Dak.
Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Mandan, N. Dak.
Stem rust, Puccinia graminis -- Pullman, Wash.
Stem smut, Sorosporium granulosum -- central Mont.
Ustilago hypodytes -- southern Mont.; western Wyo.
Ustilago sp. -- western Wyo.

STIPA LETTERMANI Vasey
Bends, cause undet. -- Pullman, Wash.
Leaf streak, Scolecotrichum graminis -- northeast Oreg.
Stem smut, Ustilago jacksonii -- Rich county, Utah.
Ustilago sp. -- western Wyo.

STIPA OCCIDENTALIS Thurb.
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.
Rust, Puccinia scaber -- western Wyo.

STIPA RICHARDSONI Link
Rust, Puccinia stipae -- Jackson, Wyo.
Sheath and stem spot, Selenophoma donacis -- Jackson, Wyo.
Selenophoma donacis var. -- central Mont.
Stem smut, Ustilago sp. -- central Mont.; western Wyo.

STIPA SIBIRICA (L.) Lam. (P.Q. 034946) (P.I. 110164).
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.
Secondary rootrot, Rhizoctonia solani -- Mandan, N. Dak.

STIPA SPARTEA Trin.
Root browning, Pythium arrhenomanes -- Mandan, N. Dak.
Rootrot, Helminthosporium sativum -- Mandan, N. Dak.

STIPA SPECIOSA Trin. & Rupr.
Stem smut, Ustilago sp. -- central Calif.

STIPA THURBERIANA Piper
Leaf streak, Scolecotrichum graminis -- Pullman, Wash.; western Wyo.
Rust, Puccinia scaber -- central Mont.
Stem smut, Ustilago hypodytes -- southern Mont.
Ustilago sp. -- southern Mont.

STIPA VIRIDULA Trin.
Blotch, Stagonospora sp. -- S. Roosevelt Park, N. Dak.
Damping-off, Pythium debaryanum -- Mandan, N. Dak., Langdon, N. Dak.
Ergot, Claviceps purpurea -- Nekoma, N. Dak.
Leaf spot, Ascochyta graminicola -- Webster, S. Dak.
Leaf streak, Scolecotrichum graminis -- Livingston, Mont.
Rootrot, Helminthosporium sativum -- common in N. Dak. and S. Dak.
Rust, Puccinia scaber -- general in N. Dak.; S. Dak.; Sprague Siding, Minn. Parasitized by Darluca filum at Mandan, N. Dak., Clark, S. Dak.
Secondary rootrot, Curvularia geniculata -- Mandan, Park River, N. Dak.
Fusarium scirpi var. acuminatum -- Mandan, N. Dak.
Rhizoctonia solani -- Park River, N. Dak.
Sclerotium sp. -- Mandan, N. Dak.
Selenophoma stem speckle, Selenophoma donacis -- Argusville, N. Dak.; Livingston, Mont.
Stem smut, Ustilago hypodytes -- Sprague Siding, Minn.
White leaf spot, Septoria secalis var. stipae -- Spiritwood, Mandan, Guptell, N. Dak.; Webster, S. Dak.

STIPA WILLIAMSII Scribn.
Leaf spot, Helminthosporium sp. -- Pullman, Wash.
Leaf streak, Scolecotrichum graminis -- western Idaho.

TRISETUM CANESCENS Buckl.
Leaf streak, Scolecotrichum graminis -- western Idaho; northwest Mont.
Stem rust, Puccinia graminis -- northern Oreg.

TRISETUM MONTANUM Vasey
Leaf streak, Scolecotrichum graminis -- northwest Mont.

TRISETUM SPICATUM (L.) Richt.
Leaf rust, Puccinia rubigo-vera -- Pullman, Wash.; northwest, Wyo. (Darluca filum on rust).
Leaf spot, Selenophoma donacis var. -- south of Red Lodge, Mont.; Beartooth Pass, Wyo.

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- A. trichophorum
- Sitanion jubatum
- Sporobolus airoides

BACTERIUM ANDROPOGONI E. F. S.
- Spodopogon sibiricus

BACTERIUM CORONAFACIENS Elliott var. ATROPURPUREUM Reddy & Godkin
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- A. repens
- A. smithii
- A. subsecundum
- A. trachycaulum
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- Bromus erectus
- B. inermis
- B. marginatus
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- E. excelsus
- E. giganteus
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BACTERIUM HOLCI Kendrick
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BACTERIUM TRANSLUCENS Jones, Johnson, & Reddy
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- A. hallii
- A. scoparius
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PHYCOMYCETES

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- A. elongatum
- A. intermedium
- A. repens

PHYCOMYCETES Cont.

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A. spicatum
A. trachycaulum
A. trichophorum
Ammophila arenaria
Andropogon furcatus
Arrhenatherum elatius
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A. repens
A. riparium
A. sibiricum
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Agrostis alba
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Arrhenatherum elatius
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B. gracilis
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S. viridis
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S. vulgare var. sudanense
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PYTHIUM IRREGULARE Buis.
Agropyron cristatum
Bromus inermis
B. tectorum
Elymus junceus
Festuca elatior

PYTHIUM (?) PERIILUM Drechsl.
Agropyron repens

PYTHIUM (?) PROLIFERUM Schenk
Bromus inermis
B. tectorum

PHYCOMYCETES Cont.

PYTHIUM ULTIMUM Trow.
Agropyron caninum
A. cristatum
A. desertorum
A. repens
Agrostis alba
Andropogon furcatus
Bromus inermis

PYTHIUM ULTIMUM Cont.
Phragmites communis
Poa ampla
P. secunda

SCLEROSPORA GRAMINICOLA (Sacc.) Schroet.
Setaria viridis

ASCOMYCETES

CLAVICEPS PURPUREA (Fr.) Tul.
Agropyron caninum
A. cristatum
A. dasystachyum
A. inerme
A. repens
A. riparium
A. sibiricum
A. smithii
A. spicatum
A. subsecundum
A. trachycaulum
A. trichophorum
Alopecurus pratensis
Arrhenatherum elatius
Bromus carinatus
B. ciliatus
B. erectus
B. inermis
B. marginatus
Calamagrostis inexpansa
Dactylis glomerata
Deschampsia caespitosa
Elymus ambiguus
E. condensatus
E. dahuricus
E. excelsus
E. giganteus
E. glaucus
E. junceus
E. macounii
E. salsuginosus
E. triticoides
Festuca elatior var. arundinacea
F. idahoensis

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H. jubatum var. caespitosum
Lolium multiflorum
L. perenne
Michel's grass
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P. pratensis
P. secunda
P. stenantha
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E. dahuricus
Poa compressa
P. secunda

ERYSIPHE GRAMINIS DC.
Agropyron inerme
A. smithii
A. spicatum
A. subsecundum

ASCOMYCETES Cont.

ERYSIPHE GRAMINIS Cont.
Agropyron trachycaulum
Agrostis exarata
Bromus carinatus
B. marginatus
B. tectorum
Dactylis glomerata
Elymus canadensis
E. condensatus
E. junceus
E. sibiricus
Festuca idahoensis
F. ovina
F. rubra var. commutata
Koeleria cristata
Melica californica
Poa arida
P. canbyi
P. compressa
P. cusickii
P. glaucifolia

ERYSIPHE GRAMINIS Cont.
Poa nemoralis
P. nevadensis
P. palustris
P. pratensis
P. scabrella
P. secunda
Polypogon monspeliensis

MYCOSPHAERELLA TULASNEI Jacz.
Poa pratensis

PHYLLACHORA SYLVATICA Sacc. & Speg.
Festuca rubra

PHYLLACHORA VULGATA Theiss. & Syd.
Muhlenbergia cuspidata

PHYLLACHORA sp.
Distichlis stricta

USTILAGINALES -- USTILAGINACEAE

SOROSPORIUM CONSANGUINEUM Ell. & Ev.
Aristida longiseta

SOROSPORIUM GRANULOSUM Ell. & Tracy
Stipa comata

SOROSPORIUM SYNTHERISMAE (Pk.) Farl.
Panicum capillare
P. miliaceum

SPHACELOTHECA CRUENTA (Kühn) A. Potter
Sorghum halepense

SPHACELOTHECA SORGHI (Lk.) Clinton
Sorghum halepense

USTILAGO AVENAE (Cda.) Jens.
Arrhenatherum elatius

USTILAGO BULLATA Berk.
Agropyron dasystachyum

USTILAGO BULLATA Cont.
Agropyron trachycaulum
Bromus anomalus
B. carinatus
B. catharticus
B. ciliatus
B. erectus
B. japonicus
B. marginatus
B. mollis
B. polyanthus
B. racemosus
B. rigidus
B. rubens
B. secalinus
B. sibiricus
B. tectorum
B. tomentellus
B. vulgaris
Elymus canadensis
E. glaucus
E. junceus
E. sibiricus
Hordeum jubatum

USTILAGINALES -- USTILAGINACEAE Cont.

USTILAGO BULLATA Cont.
Hordeum jubatum var. caespitosum
H. nodosum

USTILAGO HORDEI Lagerh.
Elymus excelsus
E. glaucus

USTILAGO HYPODYTES (Schlecht.) Fr.
Agropyron amurense
A. cristatum
A. dasystachyum
A. inerme
A. repens
A. riparium
A. spicatum
Elymus canadensis
E. condensatus
E. dahuricus
E. dasystachys
E. excelsus
E. glaucus
E. sibiricus
Hordeum brevisubulatum
Melica harfordii
Oryzopsis hymenoides
Phalaris arundinacea
Phleum phleoides
Poa ampla
P. nevadensis
Secale cereale x S. montanum
Sitanion jubatum
Stipa comata
S. thurberiana
S. viridula

USTILAGO JACKSONII Zundel & Dunlap
Stipa lettermani

USTILAGO LONGISSIMA (Sow.) Tul.
Glyceria grandis

USTILAGO MACROSPORA Desm.
Elymus canadensis

USTILAGO MACROSPORA Cont.
Elymus condensatus

USTILAGO MULFORDIANA Ell. & Ev.
Festuca dertonensis
F. octoflora
F. pacifica

USTILAGO NEGLECTA Niessl
Setaria lutescens

USTILAGO RESIDUA Clinton
Danthonia californica

USTILAGO SITANII Fischer
Hordeum jubatum
H. jubatum var. caespitosum
Sitanion jubatum

USTILAGO STRIAEFORMIS (Westend.) Niessl
Agropyron inerme
A. subsecundum
A. trachycaulum
Agrostis alba
A. castellana
A. palustris
A. stolonifera
Elymus canadensis
E. glaucus
Phleum pratense
Poa canbyi
P. pratensis
P. secunda

USTILAGO spp. (undetermined)12/
Poa secunda
Stipa cernua
S. richardsoni
S. lettermani
S. speciosa
S. thurberiana

12/ Under investigation at Pullman, Wash.

USTILAGINALES -- TILLETIACEAE

TILLETIA AIRAE Blytt
Deschampsia danthonioides
D. elongata

TILLETIA ELYMI Diet. & Holw.
Elymus glaucus

TILLETIA FUSCA Ell. & Ev.
Festuca dertonensis
F. octoflora
F. pacifica

TILLETIA GUYOTIANA Hariot
Bromus mollis
B. racemosus

TILLETIA sp. 12/
Elymus canadensis

UROCYSTIS AGROPYRI (Preuss) Schroet.
Agropyron trachycaulum
Hordeum jubatum
Poa ampla

UREDINALES -- PUCCINIACEAE

PUCCINIA AMPHIGENA Diet.
Calamovilfa longifolia

PUCCINIA ANOMALA Rostr.
Hordeum spontaneum

PUCCINIA ARISTIDAE Tracy
Aristida longiseta
Distichlis stricta

PUCCINIA BARTHOLOMAEI Diet.
Bouteloua gracilis

PUCCINIA COCKERELLIANA Bethel
Festuca scabrella

PUCCINIA CORONATA Cda.
Agrostis castellana
A. tenuis
Avena fatua
A. hookeri
Beckmannia syzigachne
Calamagrostis canadensis
C. scribneri
Deschampsia caespitosa
Festuca elatior
Holcus lanatus
Lolium multiflorum
L. perenne

PUCCINIA CORONATA Cont.
Lolium remotum
L. subulatum
Phalaris arundinacea
Polypogon monspeliensis

PUCCINIA CRANDALLII Pam. & Hume
Festuca idahoensis
F. ovina
F. rubra
F. viridula

PUCCINIA CYNODONTIS Lacroix
Cynodon dactylon

PUCCINIA DISTICHLIDIS Ell. & Ev.
Spartina gracilis

PUCCINIA EATONIAE Arth.
Sphenopholis obtusata

PUCCINIA ELLISIANA Thüm.
Andropogon scoparius

PUCCINIA GLUMARUM (Schm.) Erikss. & Henn.
Aegilops cylindrica
Agropyron albicans
A. caninum

12/ Under investigation at Pullman, Wash.

UREDINALES -- PUCCINIACEAE Cont.

PUCCCINIA GLUMARUM Cont.
Agropyron ciliare
A. cristatum
A. dasystachyum
A. desertorum
A. divaricatum
A. griffithsii
A. inerme
A. panormitamum
A. repens
A. riparium
A. smithii
A. spicatum
A. subsecundum
A. trachycaulum
A. trichophorum
A. ugamicum
Bromus anomalus
B. carinatus
B. ciliatus
B. marginatus
B. polyanthus
B. purgans
Elymus antarcticus
E. arenarius
E. canadensis
E. condensatus
E. condensatus var. pubens
E. excelsus
E. glaucus
E. interruptus
E. sabulosus
E. salina
E. sibiricus
E. triticoides
E. virescens
E. virginicus
Hordeum bulbosum
H. jubatum
H. jubatum var. caespitosum
H. murinum
H. nodosum
Puccinellia lemmoni
P. limosa
P. nutkaensis
P. nuttalliana

PUCCINIA GLUMARUM Cont.
Secale montanum
Sitanion hanseni
S. hystrix
S. jubatum
Stipa columbiana

PUCCINIA GRAMINIS Pers.
Agropyron albicans
A. caninum
A. cristatum
A. dasystachyum
A. desertorum
A. elmeri
A. griffithsii
A. inerme
A. riparium
A. sibiricum
A. smithii
A. spicatum
A. subsecundum
A. trachycaulum
A. trichophorum
Agrostis exarata
A. hallii
A. tenuis
Alopecurus arundinaceus
Avena fatua
Bromus carinatus
B. ciliatus
B. marginatus
B. rigidus
B. rubens
B. sibiricus
B. tectorum
Cinna latifolia
Dactylis glomerata
Deschampsia caespitosa
D. danthonioides
D. elongata
Elymus canadensis
E. condensatus
E. condensatus var. pubens
E. dahuricus
E. excelsus
E. glaucus

UREDINALES -- PUCCINIACEAE Cont.

PUCCINIA GRAMINIS Cont.
Elymus interruptus
E. junceus
E. macounii
E. sibiricus
E. triticoides
Festuca californica
F. elatior
F. elatior var. arundinacea
F. idahoensis
F. megalura
F. rubra
F. subulata
Glyceria pauciflora
Hierochloë odorata
Hordeum brevisubulatum
H. jubatum
H. murinum
H. nodosum
Koeleria cristata
Melica aristata
Phalaris californica
P. minor
Phleum graecum
P. phleoides
P. pratense
Poa ampla
P. canbyi
P. cusickii
P. epilis
P. glaucifolia
P. interior
P. juncifolia
P. longifolia
P. nevadensis
P. scabrella
P. secunda
P. tibetica
P. sp.
Puccinellia distans
P. nuttalliana
Sitanion jubatum
Stipa comata
Trisetum canescens

PUCCINIA HORDEI Fckl.
Hordeum murinum

PUCCINIA KANSENSIS Ell. & Barth.
Buchloë dactyloides

PUCCINIA KOELERIAE Arth.
Koeleria cristata

PUCCINIA MAGNUSIANA Körn.
Phragmites communis

PUCCINIA MONTANENSIS Ell.
Agropyron ciliare
A. cristatum
A. dasystachyum
A. ferganense
A. inerme
A. repens
A. riparium
A. sibiricum
A. smithii
A. spicatum
A. subsecundum
A. trachycaulum
A. trichophorum
Elymus canadensis
E. canadensis var. robustus
E. condensatus
E. glaucus
E. interruptus
E. macounii
E. sibiricus
Hordeum brevisubulatum
H. jubatum

PUCCINIA PATTERSONIANA Arth.
Agropyron inerme
A. spicatum
Sitanion hansenii
S. hystrix
S. jubatum

PUCCINIA PERIDERMIOSPORA (Ell. & Tracy) Arth.
Spartina pectinata

UREDINALES - PUCCINIACEAE Cont.

PUCCINIA POAE-SUDETICAE (Westend.) Jørstad
- Poa alpina
- P. ampla
- P. annua
- P. arida
- P. bulbosa
- P. canadensis
- P. canbyi
- P. compressa
- P. curta
- P. cusickii
- P. epilis
- P. gracillima
- P. interior
- P. juncifolia
- P. longifolia
- P. nemoralis
- P. nevadensis
- P. palustris
- P. pratensis
- P. scabrella
- P. secunda
- P. stenantha
- P. sylvestris
- P. tibetica
- P. trivialis
- P. vaseyochloa
- Puccinellia nuttalliana

PUCCINIA RUBIGO-VERA (DC.) Wint.
- Agropyron albicans
- A. caninum
- A. cristatum
- A. dasystachyum
- A. elmeri
- A. hirsutum
- A. inerme
- A. riparium
- A. sibiricum
- A. smithii
- A. spicatum
- A. subsecundum
- A. trachycaulum
- A. trichophorum
- Bromus carinatus

PUCCINIA RUBIGO-VERA Cont.
- Bromus ciliatus
- B. laevipes
- B. lanuginosus
- B. marginatus
- B. mollis
- B. polyanthus
- B. rigidus
- B. rubens
- B. sibiricus
- B. tectorum
- Elymus canadensis
- E. condensatus
- E. condensatus var. pubens
- E. excelsus
- E. flavescens
- E. glaucus
- E. interruptus
- E. junceus
- E. macounii
- E. salina
- E. sibiricus
- E. triticoides
- E. virginicus
- Hordeum brevisubulatum
- H. jubatum
- H. jubatum var. caespitosum
- H. nodosum
- Michel's grass
- Poa ampla
- P. canbyi
- P. juncifolia
- P. nevadensis
- P. scabrella
- P. secunda
- Puccinellia distans
- P. nuttalliana
- Secale montanum
- Sitanion hystrix
- Trisetum spicatum

PUCCINIA SCABER (Ell. & Ev.) Barth.
- Oryzopsis hymenoides
- Stipa comata
- S. occidentalis
- S. thurberiana

UREDINALES -- PUCCINIACEAE Cont.

PUCCINIA SCABER Cont.
Stipa viridula

PUCCINIA SCHEDONNARDI Kellerm. & Sw.
Schedonnardus paniculatus

PUCCINIA SESSILIS Schneid.
Phalaris arundinacea

PUCCINIA SIMULANS (Pk.) Barth.
Sporobolus cryptandrus

PUCCINIA STIPAE Arth.
Stipa comata
S. richardsoni

PUCCINIA VEXANS Farl.
Bouteloua curtipendula

UROMYCES DACTYLIDIS Otth
Poa secunda

UROMYCES JACKSONII Arth. & Fromme
Deschampsia elongata

FUNGI IMPERFECTI- MELANCONIALES

COLLETOTRICHUM GRAMINICOLUM (Ces.) Wils.
Agropyron trachycaulum
Avena fatua
A. hookeri
Calamagrostis canadensis
C. inexpansa
C. rubescens
Digitaria sanguinalis
Lolium multiflorum
L. perenne
Poa pratensis

COLLETOTRICHUM GRAMINICOLUM Cont.
Schizachne purpurascens
Sporobolus heterolepis

SEPTOGLOEUM OXYSPORUM Sacc., Bomm., & Rouss.
Agropyron trachycaulum
Agrostis alba
A. scabra
Elymus condensatus
E. triticoides

FUNGI IMPERFECTI -- MONILIALES

CERCOSPORA FUSIMACULANS Atk.
Panicum virgatum

CERCOSPORA SEMINALIS Ell. & Ev.
Buchloë dactyloides

CERCOSPORELLA SUBULATA Sprague
Deschampsia caespitosa
Melica bulbosa

CLADOSPORIUM HERBARUM (Pers.) Lk.
Agropyron smithii
Calamovilfa longifolia
Poa compressa

CURVULARIA GENICULATA (Tracy & Earle) Boedijn
Bouteloua gracilis
Brachypodium sylvaticum
Buchloë dactyloides
Digitaria sanguinalis
Echinochloa crusgalli
Elymus junceus
Koeleria cristata
Muhlenbergia japonica
Panicum virgatum
Poa compressa
Setaria viridis
Sporobolus neglectus

FUNGI IMPERFECTI -- MONILIALES Cont.

CURVULARIA GENICULATA Cont.
Stipa comata
S. viridula

CURVULARIA TRIFOLII (Kauff.) Boedijn
Digitaria sanguinalis
Echinochloa crusgalli

FUSARIUM AVENACEUM (Fr.) Sacc.
Poa compressa

FUSARIUM CULMORUM (W.G.Sm.) Sacc.
Echinochloa crusgalli

FUSARIUM GRAMINEARUM Schwabe
Agropyron cristatum
Poa pratensis

FUSARIUM MONILIFORME Sheld.
Setaria viridis

FUSARIUM POAE (Pk.) Wr.
Bouteloua gracilis

FUSARIUM SCIRPI Lamb. & Fautr.
Agropyron caninum

FUSARIUM SCIRPI var. ACUMINATUM (Ell. & Ev.) Wr.
Agropyron ciliare
A. cristatum
A. elongatum
A. repens
A. riparium
A. sibiricum
A. smithii
A. subsecundum
A. trachycaulum
Andropogon furcatus
A. hallii
Bromus erectus
Bouteloua curtipendula
B. gracilis
Brachypodium sylvaticum

FUSARIUM SCIRPI var. ACUMINATUM Cont.
Bromus inermis
B. japonicus
B. tectorum
B. tomentellus
Buchloë dactyloides
Calamovilfa longifolia
Chloris virgata
Dactylis glomerata
Digitaria sanguinalis
Distichlis stricta
Echinochloa crusgalli
Elymus canadensis
E. dahuricus
E. glaucus
E. interruptus
E. junceus
E. macounii
E. triticoides
Eragrostis curvula
E. pilosa
Festuca elatior
F. ovina
F. rubra
F. rubra commutata
Hilaria jamesii
H. mutica
Hordeum bulbosum
H. jubatum
Koeleria cristata
Oryzopsis hymenoides
Muhlenbergia racemosa
Panicum capillare
P. dichotomiflorum
P. miliaceum
P. virgatum
Phalaris tuberosa
Phleum phleoides
P. pratense
Poa annua
P. arida
P. pratensis
Setaria italica
S. viridis
Sorghum vulgare

FUNGI IMPERFECTI -- MONILIALES Cont.

FUSARIUM SCIRPI var. ACUMINATUM Cont.
Sorghum vulgare sudanense
Stipa columbiana
S. comata
S. viridula

FUSARIUM SCIRPI var. COMPACTUM Wr.
Agropyron elongatum
Hordeum jubatum

FUSARIUM SPOROTRICHOIDES Sherb.
Bouteloua gracilis

FUSARIUM sp.
Poa annua

HELMINTHOSPORIUM HALODES Drechs.
Agropyron repens
Muhlenbergia japonica
Setaria viridis

HELMINTHOSPORIUM INCONSPICUUM Ell. & Ev. var. BUCHLOES Ell. & Ev. Nom. Nud.
Buchloë dactyloides

HELMINTHOSPORIUM MONOCERAS Drechsl.
Setaria viridis

HELMINTHOSPORIUM SATIVUM Pam., King, & Bak.
Agropyron amurense
A. cristatum
A. dasystachyum
A. elongatum
A. intermedium
A. repens
A. smithii
A. sibiricum
A. subsecundum
A. trachycaulum
Ammophila arenaria
Andropogon hallii
Avena fatua
Bouteloua curtipendula
B. gracilis

HELMINTHOSPORIUM SATIVUM Cont.
Bromus carinatus
B. inermis
B. madritensis
B. tectorum
B. tomentellus
Calamovilfa longifolia
Dactylis glomerata
Digitaria sanguinalis
Echinochloa crusgalli
Elymus canadensis
E. dahuricus
E. excelsus
E. junceus
E. interruptus
E. sibiricus
Eragrostis curvula
E. pilosa
Festuca octoflora
Hordeum brevisubulatum
H. bulbosum
H. jubatum
Oryzopsis hymenoides
Panicum capillare
P. virgatum
Poa bulbosa
P. palustris
P. pratensis
P. secunda
Setaria italica
S. lutescens
S. viridis
Sorghum vulgare
S. vulgare sudanense
Stipa baicalensis
S. comata
S. sibirica
S. spartea
S. viridula

HELMINTHOSPORIUM TURCICUM Pass.
Setaria viridis
Sorghum vulgare sudanense

HELMINTHOSPORIUM VAGANS Drechsl.
Poa compressa
P. pratensis

FUNGI IMPERFECTI -- MONILIALES Cont.

HELMINTHOSPORIUM sp.
Bromus inermis
Hierochloë odorata
Panicum capillare
P. flexile
Stipa williamsii

HETEROSPORIUM AVENAE Oud.
Elymus condensatus

HETEROSPORIUM PHLEI Gregory
Phleum phleoides
P. pratense

MASTIGOSPORIUM RUBRICOSUM (Dearn. & Barth.) Sprague
Calamagrostis canadensis
Dactylis glomerata

PIRICULARIA GRISEA (Cke.) Sacc.
Scolochloa (Fluminea) festucacea
Setaria viridis

RHYNCHOSPORIUM ORTHOSPORUM Caldwell
Alopecurus pratensis
Calamagrostis canadensis

RHYNCHOSPORIUM SECALIS (Oud.) J. J. Davis
Agropyron repens
A. trachycaulum
Bromus carinatus
B. inermis
B. marginatus
Elymus canadensis
Secale montanum

SCOLECOTRICHUM GRAMINIS Fckl.
Agropyron caninum
A. dasystachyum
A. griffithsii
A. repens
A. smithii
A. spicatum
A. subsecundum
A. trachycaulum

SCOLECOTRICHUM GRAMINIS Cont.
Agrostis alba
A. exarata
Alopecurus aequalis
A. pratensis
Arrhenatherum elatius
Beckmannia syzigachne
Bromus carinatus
B. catharticus
B. marginatus
B. vulgaris
Dactylis glomerata
Deschampsia elongata
Elymus canadensis
E. condensatus
E. flavescens
E. glaucus
E. sibiricus
Glyceria elata
Hordeum jubatum
H. jubatum var. caespitosum
H. nodosum
Koeleria cristata
Melica geyeri
Michel's grass
Oryzopsis hymenoides
Phleum pratense
Poa ampla
P. canbyi
P. compressa
P. epilis
P. nevadensis
P. pratensis
P. secunda
Secale montanum
Sitanion hanseni
S. hystrix
Stipa columbiana
S. comata
S. lettermani
S. occidentalis
S. thurberiana
S. viridula
S. williamsii
Trisetum canescens
T. montanum

FUNGI IMPERFECTI -- SPHAEROPSIDALES

ASCOCHYTA AGROPYRINA (Fairm.) Trott.
- Agropyron caninum
- A. cristatum
- A. subsecundum
- A. trachycaulum
- A. trichophorum
- Elymus canadensis
- E. excelsus
- E. virginicus

ASCOCHYTA AVENAE (Petr.) Sprague & Johnson
- Avena fatua

ASCOCHYTA ELYMI Tehon & Daniels
- Elymus canadensis

ASCOCHYTA GRAMINICOLA Sacc.
- Elymus macounii
- Festuca rubra
- Hierochloë odorata
- Poa pratensis
- Stipa viridula

ASCOCHYTA GRAMINICOLA var. BRACHYPODII Trail
- Elymus macounii

ASCOCHYTA GRAMINICOLA var. DIEDICKEANA Baudys & Picb.
- Bromus inermis

ASCOCHYTA LOLII (Zimm.) Sprague & Johnson
- Lolium perenne

ASCOCHYTA (Septoria) SPARTINAE Trel.
- Spartina pectinata

ASCOCHYTA STIPAE Died.
- Sporobolus airoides

ASCOCHYTA SP.[13]
- Buchloë dactyloides
- Panicum virgatum
- Phleum pratense

DARLUCA FILUM (Biv.) Cast.
- Puccinia glumarum
- P. graminis
- P. montanensis
- P. rubigo-vera
- P. crandallii
- P. distichlidis
- P. hordei
- P. koeleriae
- P. poae-sudeticae
- P. scaber
- P. vexans

DILOPHOSPORA ALOPECURI (Fr.) Fr.
- Agropyron trachycaulum
- Melica bulbosa
- Sitanion jubatum

HENDERSONIA CALAMOVILFAE Petr.
- Calamagrostis canadensis
- Calamovilfa gigantea
- C. longifolia

HENDERSONIA CRASTOPHILA Sacc.
- Poa compressa

HENDERSONIA SIMPLEX Schroet.
- Sporobolus airoides
- S. asper

HENDERSONIA sp.
- Bromus vulgaris
- Poa pratensis
- Schizachne purpurascens

MACROPHOMINA PHASEOLI (Maubl.) Ashby
- Arrhenatherum elatius
- Brachypodium sylvaticum

13/ Several species of Ascochyta, Phyllosticta, Septoria, and Stagonospora are under investigation at Mandan, N. Dak.

FUNGI IMPERFECTI -- SPHAEROPSIDALES Cont.

MACROPHOMINA PHASEOLI (Maubl.)
Ashby Cont.
Elymus dasystachys

PHOMA (TERRESTRIS Hansen)
Agropyron smithii

PHYLLOSTICTA SORGHINA Sacc.
Setaria viridis

PHYLLOSTICTA sp.
Andropogon furcatus
Schizachne purpurascens

SELENOPHOMA BROMIGENA (Sacc.)
Sprague & Johnson
Bromus inermis

SELENOPHOMA DONACIS (Pass.)
Sprague & Johnson
Calamovilfa longifolia
Elymus condensatus
E. flavescens
Festuca ovina
Panicum virgatum
Phalaris arundinacea
Stipa comata
S. richardsoni
S. viridula

SELENOPHOMA DONACIS var.
Agrostis scabra
Bouteloua curtipendula
Calamagrostis scribneri
Deschampsia atropurpurea
D. caespitosa
D. elongata
Festuca ovina var. brachyphylla
F. rubra
Hesperochloa (Festuca) kingii
Trisetum spicatum

SELENOPHOMA DONACIS var.
Agropyron inerme
Elymus glaucus
Stipa richardsoni

SELENOPHOMA DONACIS var.
Agropyron smithii
A. spicatum
A. trachycaulum
Aristida longiseta
Arrhenatherum elatius
Dactylis glomerata
Elymus giganteus
E. junceus
Festuca idahoensis
Koeleria cristata
Oryzopsis hymenoides
Poa alpina
P. ampla
P. arctica
P. arida
P. compressa
P. epilis
P. interior
P. pratensis
P. secunda
Sitanion hystrix

SELENOPHOMA sp.
Sitanion hansenii
S. hystrix

SEPTORIA BROMI Sacc.
Bromus japonicus
B. secalinus

SEPTORIA CALAMAGROSTIDIS (Lib.) Sacc. f. KOELERIAE (Cocc. & Mor.) Sprague
Koeleria cristata

SEPTORIA CALAMOVILFAE Petr.
Calamovilfa longifolia

SEPTORIA ELYMI Ell. & Ev.
Agropyron repens
A. smithii
A. trachycaulum
Elymus canadensis

FUNGI IMPERFECTI -- SPHAEROPSIDALES Cont.

SEPTORIA INFUSCANS (Ell. & Ev.) Sprague
Elymus condensatus

SEPTORIA MACROPODA Pass.
Poa annua

SEPTORIA MACROPODA var. SEPTULATA (Gz. Fr.) Sprague
Poa pratensis

SEPTORIA MACROPODA var. GRANDIS Sprague
Poa secunda

SEPTORIA NODORUM Berk.
Agropyron trachycaulum
Elymus junceus
Glyceria elata
G. pauciflora
Poa palustris

SEPTORIA OUDEMANSII Sacc.
Poa canbyi
P. compressa
P. nevadensis
P. pratensis

SEPTORIA PACIFICA Sprague
Elymus condensatus

SEPTORIA PASSERINII Sacc.
Hordeum jubatum
H. nodosum

SEPTORIA SECALIS Prill. & Delacr. var. STIPAE Sprague
Agrostis scabra
Stipa viridula

SEPTORIA TENELLA Cke. & Ell.
Festuca idahoensis

SEPTORIA TENELLA Cont.
Festuca octoflora
F. ovina
F. rubra
F. rubra var. commutata

SEPTORIA TRISETI Speg.
Agrostis castellana
A. tenuis

SEPTORIA sp.
Agropyron caninum
A. smithii
A. trachycaulum
Elymus arenarius
E. canadensis
E. macounii
Muhlenbergia mexicana

SPHAEROPSIS sp.
Poa pratensis

STAGONOSPORA ARENARIA Sacc.
Agropyron trachycaulum
Cinna latifolia
Elymus triticoides
Oryzopsis hymenoides
Phalaris arundinacea
Scolochloa (Fluminea) festucacea

STAGONOSPORA sp.
Glyceria striata
Poa pratensis
Stipa viridula

WOJNOWICIA GRAMINIS (McAlp.) Sacc. & D. Sacc.
Agropyron repens
A. smithii
Dactylis glomerata
Distichlis stricta
Poa pratensis

FUNGI IMPERFECTI -- MYCELIA STERILIA

RHIZOCTONIA SOLANI Kühn
- Agropyron ciliare
- A. cristatum
- A. elongatum
- A. repens
- A. sibiricum
- A. smithii
- A. trachycaulum
- A. trichophorum
- Agrostis alba
- Bouteloua curtipendula
- B. gracilis
- Bromus carinatus
- B. inermis
- Buchloë dactyloides
- Echinochloa crusgalli
- Elymus canadensis
- E. junceus
- Eragrostis curvula
- Festuca octoflora
- F. rubra
- F. rubra commutata
- Hordeum brevisubulatum

RHIZOCTONIA SOLANI Cont.
- Hordeum jubatum
- Koeleria cristata
- Lolium multiflorum
- Oryzopsis hymenoides
- Muhlenbergia racemosa
- Panicum capillare
- Phleum pratense
- Poa bulbosa
- P. palustris
- P. pratensis
- Setaria viridis
- Stipa comata
- S. sibirica
- S. viridula

SCLEROTIUM sp.
- Agropyron dasystachyum
- Bromus inermis
- Stipa viridula

SCLEROTIUM RHIZODES Auersw.
- Agrostis alba

CAUSE UNDETERMINED

BENDS
- Agropyron amurense
- A. cristatum
- A. dasystachyum
- A. inerme
- A. spicatum
- A. trachycaulum
- Bromus inermis
- Dactylis glomerata
- Danthonia californica
- D. californica var. americana
- D. unispicata
- Elymus antarcticus
- E. canadensis
- E. condensatus
- E. excelsus
- E. glaucus
- E. junceus
- Festuca elatior
- F. elatior var. arundinacea
- F. idahoensis

BENDS Cont.
- Festuca ovina
- F. pacifica
- F. thurberi
- Hordeum brevisubulatum
- Koeleria cristata
- Oryzopsis hymenoides
- Phleum pratense
- Poa canbyi
- P. nemoralis
- P. nevadensis
- P. secunda
- Sporobolus airoides
- Stipa lettermani

SEEDLING BLIGHT
- Agropyron cristatum
- A. inerme
- A. dasystachyum
- A. spicatum
- Elymus glaucus